INDUCTIVE REASONING

A Study of Tarkà and Its Role in Indian Logic

By

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PREFACE

The present work was submitted as a thesis for the D. Litt. degree of the Calcutta University and was unanimously approved by the Board of Adjudicators in 1949.

One of the chief incentives for embarking upon this arduous work was to place materials at the hands of the scholars of the European and American universities, which would enable them to make an unbiased appraisal of the flight of logical speculations recorded by Indian philosophers. I thought that my cherished desire was bound to remain unrealized if the volume was not speedily published.

So with this object always in view, I first approached the authorities of the University of Calcutta and then the Education Department of the Government of West Bengal, but only to reap the result of my fruitless endeavours.

I sent my work to the press even at the risk of being involved in financial difficulties, and I am glad to see that this humble work has seen the light of the day. Before I finish, I must express my sense of profound gratitude to Prof. Anukul Chandra Mookerjee of the Allahabad University for the unstinted appreciation and encouragement which he ungrudgingly extended twords me. My heartiest thanks are due to Prof. Jatilcoomar Mookerjee, who, young in age but aged in scholarship, has rendered invaluable assistance in numerous ways. A cold-blooded logician as he is, he has compelled me to revise my original writing in many places by his unsparing and devastating criticism.

It is a matter of profound regret to me that Śrī Ksitindranath Banerjee B.A., LL.B., and his son Śrī Visvanath Banerjee are no longer in the land of the living to see the result of my researches. Lastly I must express my sense of irredeemable debts which I owe to Mahārājā Bhupendrachandra Sinha B.A. of Susang, to Śrī Binayaknath Banerjee M.A., LL. B., Advocate, Calcutta High Court, and to Dr. Jyotirmoya Banerjee M.B., D.P.H., D.T.M., for the keen appreciation and constant encouragement which I have received from them in the

course of my scholastic pursuit—a debt which is too deep and personal for formal acknowledgement.

I shall be failing in my duty if I do not handsomely express my thanks to Śrī Kamalakanta Dalal, Manager, Calcutta Oriental Press Ltd. for the lively interest which he took in the publication of my work.

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INTRODUCTION

In the course of my study of Jaina Nyāya I found that the Jainas have accorded a position of supreme importance to *tarka* as an instrument of inductive knowledge. Its criticism of the Nyāya conception of *tarka* stimulated my curiosity to study the Nyāya literature on the subject. I found that the fund of speculations in Nyāya far exceeded in extent and in quality the speculations of the Jainas. The wealth of materials proved too strong a temptation for me and I thought that if I could give a critical representation of the thoughts of the philosophers, whose activities were spread out over several centuries, it might be regarded as an humble contribution to the present stock of knowledge. The difficulty of language and the abstruseness of the arguments in the original texts are real hurdles in the way of a research scholar on Indian philosophy. But the survey of the contour and also of the fundamental topics of Indian philosophy has been completed by the works of Sir Sarvapalli Radhakrishnan and of the late Professor S. N. Dasgupta, whose achievements will remain immortal in the annals of the cultural history of India in recent times. The immortal work of the late Mahāmahopādhyāya Dr S. C. Vidyābhūṣaṇa and the illuminating articles and papers of Mahāmahopādhyāya Dr Gopinath Kaviraj, M.A., D. Litt., have also served to narrow down the scope of future workers on Indian philosophy. What now remains is the study of individual problems. I adopted for my researches the problem of *tarka*, inductive reasoning, which I have rendered for the sake of brevity simply as reasoning. The difficulties of the original presentation in Sanskrit are too familiar to require to be stressed. I have perhaps set myself a difficult task—perhaps too difficult for my equipment. But the faith sustains me that scholars would make handsome allowance for the difficulties and obscurities of the materials and they would encourage me if I succeed in throwing spots of light on a tangled problem, which is hardly studied in the original even by the orthodox students of *tols*. I am perhaps guilty of imprudence for choosing a subject which is enormously stiff and whose promise of success is problematic. I was rather drawn into

it and I must be excused if I have been enterprising, which is the privilege of youth.

The present dissertation represents the strenuous labour of full six years involved in the study of the writings of the philosophers of various schools. I now present the results of my study of reasoning in all its aspects, which must be admitted to have tremendous logical and epistemological value. The importance of the subject of my research may be gathered from the fact that Vardhamāna has accorded almost co-equal status to reasoning and inference, as the dual organ of the proof of God's existence. Udayana has compared these two to the feet of God. The aptness of the imagery is derived from the fact that reasoning and inference together constitute the evidence of Divine Reality[1]. I have made my study as comprehensive and as intensive as lay in my power. The present dissertation starts from the *Nyāyasūtra* and comes down to the latest exponents of the school of neo-logicians, and embraces a comprehensive treatment of the Vaiśeṣika, Mādhva and Jaina schools of thought.

The representation of the speculations of the Mādhva school of philosophy on this topic will, I hope, be regarded as particularly interesting and the views of Vyāsatīrtha will be appreciated as highly original. I must in this connexion place on record my deep gratitude to the late lamented Professor S. N. Dasgupta, who allowed me to make a copy of the chapter dealing with reasoning from the manuscript of the *Tarkatāṇḍava* of Vyāsatīrtha, which was in his possession. It is a matter of genuine gratification that this important work of Vyāsatīrtha is being published by the Mysore University in parts. But the part dealing with *anumāna* (deductive reasoning) and *tarka* (inductive reasoning) is still unpublished. I had the good fortune to make a study of this chapter in the manuscript and I have recorded the results of my study of the chapter on *tarka* (inductive reasoning) in the present work.

Lastly, I have made a dispassionate study of the speculations of Śrīharṣa on the problem. The last three chapters are devoted to the elucidation of Śrīharṣa's subtle analysis. I have bestowed close reflec-

1 Īśasyai'ṣa niveśitaḥ padayuge. ...NKu. ch. I. 1. padayuge, padyate jñāyate 'nene' ti vyutpattyā pratyāyakayuge pramāṇatarkarūpe. NKuP, p. 2.

tion and hard thinking on this part, which has proved too exacting at times. But I have not allowed myself to be deterred by the obvious difficulties of Śrīharṣa's analysis. I have sought to represent to the modern philosophers of Europe and America, who may favour my work with their perusal, what the astounding intellect of Śrīharṣa has achieved. It will be admitted, I trust, that the contributions of the Indian mind in philosophy are not inferior to those of Europeans. Notwithstanding what has been done, the Indian mind, in the field of philosophy at any rate, has not been thoroughly represented to the modern world. It may not be a vain hope on my part that the scholars of the world will not refuse it the study that it deserves. The present condition of the world is not favourable or conducive to philosophical speculation. People, including the custodians of culture, are too much obsessed with economic worries. But this must be a passing phase. Men cannot live in perpetual tension. With the advent of true peace and economic self-sufficiency our academies are bound to recover their wonted vigour and I rest in the hope that then a thorough and all-out endeavour will be made to recover and to reappraise the cultural heritage of India. The professional philosophers of Europe had a cheap estimate of India's philosophies. The writings of Sir Sarvapalli Radhakrishnan, late Prof. S. N. Dasgupta, Dr Satkari Mookerjee and others must have proved the absurdity of these opinions. I am only following in their foot-steps and the present attempt of mine, which gives a survey of the logical speculations of India on a particular problem spread over at least 1500 years, is inspired by the same faith which has characterized my predecessors. I have had to study almost all the important problems of logic and some of metaphysics in the course of my dissertation and I hope that a modern student will get a fairly comprehensive idea of India's philosophical thought from this work.

I have made the study of *tarka* as complete and thorough as the available data have made possible. It will show that no problem, whatever may be its position in the whole scheme of philosophy, has received desultory attention from the philosophers of India. Indian philosophers have been thorough-going all along in their study of problems and the differences of philosophers have only served to shed

a flood of light upon all the aspects and bearings of each. This shows that the Indian mind has never been languid or indolent in the past. The cultural integrity and independence of India were not affected in the least by the loss of political freedom prior to British rule. The cause of this self-possession and balanced attitude must be found in the fact that the Brahmins, who were the custodians and trustees of the national culture, never ceased to dedicate their lives to the cultivation of their national literature and stood immune from the temptations of political career. It is rather in the British period that the majority of the best intellects were weaned away from the study of Sanskrit to the cultivation of English. The knowledge of English culture was a great boon, but the total ignorance and neglect of the nation's past cultural achievements almost entirely enshrined in Sanskrit has made the cultural make-up of the Indian graduates of modern universities one-sided and deficient in balance. Imperfect knowledge is responsible for imperfect sympathy and however much we may regret the apathy and studious indifference to India's past culture on the part of the alumni of the modern universities, we must not bow to this position of affairs as the inevitable dispensation of fate. It appeared that the most convenient and expedient way to attract the sympathetic attention of cultured Indians to the merits of India's thought was to make a dispassionate presentment of the same in English which is now occupying the position of India's cultural language in the place of Sanskrit. The present dissertation is an attempt in that direction.

The speculations on reasoning should be regarded by a modern student of logic as entirely original contributions of Indian logicians. I have tried to make them available to the academies of the modern world as faithfully as possible. The elaborate foot-notes will go to prove how far I have been successful. I have been progressively convinced of the love of thoroughness and clarity of the old thinkers of India and I have felt that comprehensive treatment of their subtle reflections may appear to be too technical and too elaborate. But I have elected to run the risk and I think that we must not be afraid of the temper of the time, which may either be frayed by these subtle distinctions or may fight shy of these logical exercises. It has however been rubbed

in on my mind by my revered *guru*, Dr Satkari Mookerjee, under whose guidance I have worked all along, that the present-day Sanskrit scholars of India owe it to the world to lay bare the Indian mind in all its subtle workings before the votaries of truth. The importance of philosophical speculation does not, in my humble judgment, lie so much in the truth achieved as in the attempts at the finding of the same. Inspired by this ideal I have ventured to represent the thinking of India on what ought to be regarded as an important problem. It is no doubt a study of only one problem of India's logic, but the future edifice of Indian culture can be re-built only on the foundation laid by the thorough study of its individual problems. Regarded from this angle of view the present venture may be looked upon as a contribution toward the fulfilment of the consummation, to be achieved in future by means of the accumulated labours of hosts of scholars.

PRONUNCIATION

SCHEME OF TRANSLITERATION OF SANSKRIT ALPHABET

Vowels

अ a, आ ā, इ i, ई ī, उ u, ऊ ū, ऋ ṛ,
ऌ ḷ, ए e, ऐ ai, ओ o, औ au,

Consonants

क् k, ख् kh, ग् g, घ् gh, ङ् ṅ,
च् c, छ् ch, ज् j, झ् jh, ञ् ñ,
ट् ṭ, ठ् ṭh, ड् ḍ, ढ् ḍh, ण् ṇ,
त् t, थ् th, द् d, ध् dh, न् n,
प् p, फ् ph, ब् b, भ् bh, म् m,
य् y, र् r, ल् l,
व् v, श् ś, ष् ṣ, स् s, ह् h,
ṁ or ṃ, : ḥ.

ABBREVIATIONS

AS.	=	Advaitasiddhi with Laghucandrikā (NSP)
ĀTV.	=	Ātmatattvaviveka (Bib. Ind.)
ĀTVP.	=	Ātmatattvavivekaprakāśikā (Bib. Ind.)
ĀTVD.	=	Ātmatattvavivekadīdhiti (Bib. Ind.)
Bib. Ind.	=	Bibliotheca Indica
ChSS	=	Chowkhamba Sanskrit Series
com.	=	commentary
CSS.	=	Calcutta Sanskrit Series
Din.	=	Dinakarī with com. Rāmarudrī (NSP)
Ed.	=	Edited by
K.	=	Kiraṇāvalī (ChSS)
KhKh.	=	Khaṇḍanakhaṇḍakhādya with the com. of Ānandapūrṇa (Ed. Laxman Sastri, ChSS)
Lakṣaṇāvalī	=	(ChSS)
M.	=	Muktāvalī (NSP)
MB.	=	Mahābhāṣya
MS.	=	Manuscript
n	=	foot-note
NB.	=	Nyāyabhāṣya (CSS)
NK.	=	Nyāyakandalī (VSS)
NKu.	=	Nyāyakusumāñjali (ChSS)
NKuP.	=	Nyāyakusumāñjaliprakāśa (ChSS)
NKuPM.	=	Nyāyakusumāñjaliprakāśamakaranda (ChSS)
NL.	=	Nyāyalīlāvatī (ChSS)
NLP.	=	Nyāyalīlāvatīprakāśa (ChSS)
NLPV.	=	Nyāyalīlāvatīprakāśavivṛti (ChSS)
NM.	=	Nyāyamañjarī (VSS)
NP.	=	Nyāyapariśuddhi with the com. of Śrīnivāśa (ChSS)
NPa.	=	Nyāyapariśiṣṭa (CSS)
NS.	=	Nyāyasūtra (CSS)
NSP.	=	Nirnaya Sagar Press
Nsu.	=	Nyāyasudhā (Ed. T. R. Krishnamacharya, Kumbhakonam)

NV. = Nyāyavārttika (CSS)
NVTT. = Nyāyavārttikatātparyaṭīkā (CSS)
NVTTP. = Nyāyavārttikatātparyaṭīkāpariśuddhi (Bib. Ind.)
NVTTPP. = Nyāyavārttikatātparyaṭīkāpariśuddhiprakāśa (Bib. Ind.)
PNT. = Pramāṇanayatattvālokālaṃkāra (Motilal Ladhaji, Poona)
PP. = Pramāṇapaddhati (Ed. T. R. Krishnamacharya, Kumbhakonam)
PSED. = THE PRACTICAL SANSKRIT-ENGLISH DICTIONARY (Apte) (Third Edition, 1924)
PPT. = Pramāṇapaddhatiṭīkā of Janārdana Bhaṭṭa (Ed. T. R. Krishnamacharya, Kumbhakonam)
RS. = Rasasāra (Ed. MM. Gopinath Kaviraj)
Śakuntalā = (Vaṇi Vilas Press)
Sāhityadarpaṇa = (Ed. Gurunath Vidyānidhi)
SDS. = Sarvadarśanasaṃgraha (Ed. MM. Vasudev Sastri Abhyankar, Poona)
SVR. = Syādvādaratnākara (Motilal Ladhaji, Poona)
STV. = Sāṃkhyatattvavibhākara (ChSS)
Śl. = Śloka
ŚV. = Ślokavārttika (ChSS)
TCM. = Tattvacintāmaṇi with Gādādharī (ChSS)
TR. = Tārkikarakṣā with the com. of Mallinātha (Medical Hall Press, Benares)
TT. MS. = Ms. of the Tarkatāṇḍava (belonging to the late Prof. S. N. Dasgupta)
VV. = Vādivinoda (Ed. MM. Ganganath Jha)
VSS. = Vizianagram Sanskrit Series
VVṛ. = Vyomavatīvṛtti (ChSS)

CHAPTER I

THE NATURE AND UTILITY OF REASONING

In the Jaina epistemology a definitive place has been accorded to *tarka* as an independent source of knowledge of the universal and necessary character of a connexion between two terms. In fact inference is possible if there is knowledge of universal proposition at its back. Now the problem of paramount importance and extreme difficulty at the same time, which logic or rather the philosophy of logic has to solve, is the problem of the knowledge of the universal proposition. The validity of the conclusion ultimately rests on the validity of the universal proposition. But how can such knowledge be acquired ? What is its source ? Certainly it cannot be entirely empirical in character. Human experience severally and even collectively has its obvious limitations in that it is confined to a limited number of instances in which the two phenomena are found to be mutually associated. But the universal proposition which is the foundational datum and starting point of inference is categorically universal in its reference. Even the relation of humanity and mortality or of fire and smoke could not be ascertained as valid for all times and all places if we were to depend entirely on the evidence of our experience. Even if it is allowed that the knowledge of one individual includes in its scope the knowledge of all the individuals of the class in so far as they embody the class-character which is directly envisaged in the individual in question, yet the character of necessity of the relation between the two terms which is presupposed in the universal proposition would not be explained. It has been contended by a late school of Naiyāyikas that when a person perceives an individual, which belongs to a class, he perceives the individual as possessed of the class-character or the universal ; and through his experience of the universal, he comes to have a sort of direct intuition of all the individuals possessing that universal as a necessary factor of their being. The fact that when a man perceives a coin and realizes its value, he has no doubt that a second

coin of the same class possesses the same value. This proves that through the knowledge of one individual coin and its value he has realized the value of all the coins belonging to that category. For instance, the knowledge that a particular rupee possesses the value of sixteen annas is not confined to that individual coin only, but extends to all the coins of the same denomination irrespective of the differences that distinguish individual coins from one another. It should be noted that this apparently simple cognition of a rupee and its value is not a cognition of an isolated fact. In the first place, the cognition of one rupee is to be understood on the contention of the Naiyāyika as equivalent to the cognition of all rupees. In the second place, the cognition of the value of an individual coin as consisting of sixteen annas is also a cognition of such value of all such coins. In the third place, the connexion of all the coins with such value in all its cases is also cognised as a universal fact through the cognition of such connexion in one rupee.

Now a question arises. Are the cognition of all the individual coins and the cognition of the value of all the individual coins and the cognition of the connexion of each individual coin with each individual value three separate cognitions, or one cognition from the very start ? It seems obvious that the third cognition which takes stock of the connexion between all the individuals of the class and their value is the result of the preceding two cognitions. Though the same process may be at work in all these three instances so far as the universal reference of the cognitions in question is taken into account, it seems equally obvious that something more is needed to account for the element of necessity which goes with the third cognition. By knowing the value of one rupee we come to have a necessary belief that all rupees possess the same value. Even if it is admitted that the cognition of one individual carries with it the cognition of all the individuals, that can at most account for the element of universality and not the element of necessity both of which however are presupposed in the universal proposition in order that it may serve as the condition of inference.

We started with an enquiry into the possibility of the knowledge of the universal proposition and we have considered the theory

of the Naiyāyikas that the cognition of one individual of a class gives insight into all the individuals of that class through the medium of the universal that characterizes each and all of them. We have adumbrated that even if we admit the Naiyāyika's contention to be valid, the belief in the necessity of the connexion of two classes of facts, which is posited in the universal proposition, requires something more to justify it. A cognition of an individual is at most the cognition of a contingent fact and however much its scope may be extended it cannot rise above the level of its assertory character. In other words, such a cognition can enable us to assert that A is B. It cannot guarantee that A *must* be B. The implication of the universal proposition which serves as the major premise is not exhausted by the element of the universality, but the element of necessity is also included in its fold. Now, this element of necessity, which can be satisfied only by an unwavering assurance of the impossibility of its being otherwise, cannot be afforded by any ordinary cognition, perceptual or the like.

Certitude of knowledge is capable of being attained by the elimination of contrary possibilities. In other words, knowledge is hindered from attaining the level of certitude if there is a doubt about the possibility of its being otherwise. Doubt means the oscillation of the mind between two or more alternatives, which can be removed only by the demonstration of the conflicting alternatives as impossible, and the consequent determination of the knowledge to only one alternative. It is a question of paramount importance as to what is the instrument that makes such elimination of the contrary alternatives possible. It is common knowledge that even such accredited instruments as perception and inference are thwarted by the emergence of doubt from yielding their ultimate deliverances. In perception of a particular entity standing erect before our eyes the mind is perplexed by a doubt whether it is a tree or a human being that is being perceived. Unless the doubt is removed knowledge cannot take place. And even in cases of perception where there is no initial doubt, its validity is liable to be called in question by the arousal of a doubt on the analogy of a false experience that happened in the past. Take, for instance, the perception of a

stream of water in the desert, which may be veridical. But even this veridical perception is assailed by a doubt of its authenticity on the analogy of past experiences which proved to be false. Of course, verification furnishes the necessary corrective in cases where it is possible. But in cases which are not capable of verification we have to discover reasons for determining the validity of the belief. The issue can be briefly put as follows. Are the so-called sources of knowledge capable of giving us authentic knowledge or only tentative beliefs, which require to be proved as valid before they can be accepted as knowledge proper? The answer of Indian philosophers has been that doubts, whether frustrating the operation of the instruments of knowledge or assailing the validity of the resultant cognition, are rather of the nature of accidents to be looked upon as thwarting agents. They cannot be construed as evidence of intrinsic inefficiency of the instruments of knowledge or of the inherent invalidity of their resultant deliverances. Doubt has to be overcome in order that knowledge may occur or become effective. How can the removal of the doubt be secured? Herein *tarka* comes in request. We propose to render henceforward *tarka* as reasoning, though we are not absolutely sure of the justice and adequacy of the English equivalent. But the definition of *tarka* as propounded by the traditional philosophers will also apply to the term 'reasoning', and this will sufficiently delimit the connotation of the latter and thus make undesirable extension impossible.

That reasoning (*tarka*) serves to eliminate doubt and thereby to help the determination of truth is recognised even by the author of the *Nyāyasūtra*. Reasoning has been defined to be an intellectual act which contributes to the determination of truth by means of adducing logical grounds (in favour of one of the alternative possibilities), when the reality is not known in its proper character[1]. Vātsyāyana observes that when two contradictory alternatives present themselves as equally possible with regard to a particular subject of enquiry and the mind is made to oscillate

1 avijñātatattve'rthe kāraṇopapattitas tattvajñānārtham ūhas tarkaḥ.
NS, I. i. 40.

between them, the consideration of reasons in support of one alternative helps to resolve the deadlock. With the elimination of doubt resulting in the elimination of one of the terms the uncontradicted alternative is taken to be the truth[1]. To revert to our old example of the tree and the man, the object lying ahead is determined to be a human being if the characteristic features, *e.g.* hands and feet, are cognised. This cognition of attributes, which are possible only in one of the two conflicting alternatives, serves to clinch the issue, and we at once conclude that the object ahead is a human being. It is obvious that both the alternatives cannot be true because of their mutual incompatibility. So the first step in the process consists in the recognition of the impossibility of both alternatives being true. The second step lies in the search for and subsequent discovery of logical grounds which are possible only in one alternative. The final result is the determination of the subject of dispute being this (a human being) and not that (a tree).

Now, reasoning has not been regarded as an independent instrument of knowledge by the Naiyāyikas. But nevertheless, they acknowledge the efficacy of reasoning as contributory to the determination of truth. Reasoning, it is argued, consists in the differentiation of the possible alternatives and consideration of logical grounds, which serve to distinguish one alternative from the remaining possibilities as the most reasonable, and accordingly determines our preference for this. Reasoning, thus, helps to facilitate the operation of the relevant instrument of knowledge with regard to one of the alternative data by putting it on a sound logical basis. The actual determination of the nature of the datum is effected by the relevant instrument, perception or inference etc., and reasoning only paves the way for its free activity[2].

1 atha jijñāsitasya vastuno vyāhatau dharmau vibhāgena vimṛśati kiṃsvid ittham āhosvin nettham iti. vimṛśyamānayor dharmayor ekaṃ kāraṇopapattyā 'nujānāti, sambhavaty asmin kāraṇaṃ pramāṇaṃ hetur iti kāraṇopapattyā syād evam etan netarad iti. NB, pp. 320-21.

2 NV, pp. 326-27.

Vācaspati Miśra is in complete agreement with Vātsyāyana and Uddyotakara with regard to the status of reasoning as an auxiliary factor to the independent instruments of knowledge[1]. In the preceding paragraph we have considered the view of Uddyotakara that reasoning helps to determine between two competing alternatives on the superior strength of one of them. Reasoning, thus, indicates that one of the alternatives is logically impossible and by the method of elimination the remaining alternative is the possible truth. Vācaspati lays stress upon this aspect of elimination as the true contribution of reasoning. Reasoning is thus the *reductio ad absurdum* of the competing possibilities. It comes into play only when there arises a deadlock on account of the presentation of two contradictorily opposed possibilities as claimants for truth. Reasoning enables us to conclude, in the first instance, that both these alternatives are not logically possible. In the second instance, by putting forward considerations against one of the alternatives it enables us to reject what is shown to be logically absurd. The determination of truth is automatically accomplished by the relevant instrument of knowledge which was hitherto kept in check by the doubt arising from the *prima facie* claim for truth by two conflicting alternatives. So according to Vācaspati reasoning serves to demonstrate the absurdity of the truth-claim of the false competitors and this demonstration of absurdity subserves the purpose of the instrument of knowledge. Reasoning comes to be requisitioned when there is an enquiry of truth and subsequently the appearance of conflicting possibilities creates a doubt about the real issue. Here reasoning comes to the aid of the cognitive instrument by removing the doubt. The removal of doubt is effected by the consideration of overwhelming grounds, which prove the absurdity of the false alternatives. The determination of truth, as has been observed before, is effected by the relevant cognitive instrument and reasoning has nothing to contribute to the positive finding. Its services and functions are thus of a negative character. Reasoning helps the

1 The instruments of knowledge, according to the Naiyāyika are only four, *viz.* perception, inference, comparison and verbal testimony.

rejection of the false alternative and this rejection of the contradictory alternative is interpreted as its positive service towards the determination of truth[1].

Udayana endorses the position of Vācaspati that reasoning serves to eliminate the opposite issue by the demonstration of absurd consequences, which follow from the opponent's position as a matter of logical necessity. To take an example, let us suppose that the sceptic questions the causal efficiency of water for allaying the pain of thirst. How can it be proved that the sceptic's position is wrong? Udayana would resort to reasoning. He would argue, "If water did not allay thirst, nobody would drink water when thirsty. As a matter of fact, people drink water to allay thirst and nobody has been disappointed in his expectation". Here as elsewhere reasoning assumes the form of a *reductio ad absurdum*. In the instance cited, the *reductio ad absurdum* serves to demonstrate that the doubt or denial would entail rejection of an admitted truth. Another variety of it consists in the enforced admission of an issue, contradicted by an accredited instrument of valid cognition. Thus, if one were to argue that drinking of water causes burning sensation, the absurdity of the position can be demonstrated by an actual experiment. One drinks water and is satisfied that it does not produce any such effect. The position of the opponent is thus invalidated by the necessity of admitting a fact contradicted by valid cognition. Reasoning thus is of two types according as it makes the admission of an absurdity or the rejection of an accepted truth inevitable[2]. In spite of the fact that reasoning in the shape of *reductio ad absurdum* enables us to reject a false conclusion, it is not regarded as a form of inference or an independent source of knowledge by the exponents of the Nyāya school of philosophy. Reasoning is regarded as an instrument of

1 yasmin viṣaye pramāṇaṃ pravartitum udyataṃ tadviparyayāśaṅkāyāṃ na tāvat pravartate, na yāvad aniṣṭāpattyā viparyayāśaṅkā 'panīyate, tadapanaya eva ca svaviṣaye pramāṇasambhava iti co'papattir iti vyākhyāyate.

NVTT, p. 321.

2 aniṣṭaṃ ca dvividhaṃ prāmāṇikaparityāgo 'prāmāṇikaparigrahaś ca. yathā yady udakaṃ pipāsāduḥkhaṃ na śamayet na pīyeta, yadi ca tad eva param antar dahet, tadā aviśiṣṭaṃ mām api dahet. ATV, p. 538.

negative value in that it only serves to show the absurdity of the opposite alternative and has no direct bearing upon the determination of positive truth. The positive truth is determined by an accredited cognitive instrument. The resultant rejection of the false issue is made possible by the demonstration of the absurdity of the opponent's position which is made the ground for the inference of such absurdity. But though reasoning satisfies the formal conditions of inference inasmuch as it is based upon the necessary connexion between the opponent's position, which serves the purpose of the logical ground, and the absurd issue, which follows as a necessary consequence, it is not regarded as a means of proof of an actual situation. The inference is of a hypothetical character and hypothetical inference is not accepted as a valid instrument by Indian logicians. To return to our old example, "If water did not allay thirst, no man would drink it for the purpose". The logical ground is furnished by the antecedent clause of the hypothetical proposition. The arguer knows that it is false. He is absolutely sure that water allays thirst and the denial of it is untrue. The untruth of the position is demonstrated by the absurd consequence which follows from it. The consequence follows as a matter of undeniable logical necessity, because it is necessarily bound up with the condition. Indian logicians believe only in the material truth of the conditions of inference. Although the necessary relarion between the ground and the consequent in the hypothetical proposition is a material truth, the ground is only assumed for the sake of argument. The ground 'the incapacity to allay thirst' does not belong as a matter of actual fact to the subject, 'water', and thus the minor premise in the proposed syllogism is false. But it is admitted purely for the sake of argument and it serves as a condition for the demonstration of the absurdity inherent in the opponent's opposition. Though its services are valued, reasoning as a kind of hypothetical argument is not admitted to be an accredited source of valid knowledge inasmuch as it lacks material truth[1]. We shall devote five separate chapters to the consideration of this problem and we

1 NVTT, p. 54; *vide* also NV, p. 328.

shall find that Indian logicians are by no means agreed in their views of the logical value of this important organ of philosophical speculation.[1]

We now propose to resume our discussion of reasoning as an active organ for the resolution of doubt, which has been found to create a logical deadlock. Vācaspati maintains, we have found, that reasoning serves to remove the doubt which the presentation of conflicting alternatives entails. There is hardly any room for doubt that reasoning contributes to the elimination of doubt and thus removes the obstacle to the operation of the relevant instrument of knowledge[2]. Let us take a concrete example. The Naiyāyika holds that word is perishable, but the Mīmāṃsist maintains that it is eternal. Each advances reasons in support of his position and the conflict of the philosophers is bound to create a doubt about the nature of word, and thus a deadlock emerges. Here reasoning is called into requisition and by the consideration of the logical consequences of the grounds advanced by the philosophers, it helps us to see whether the particular position is in conflict with the established convictions of mankind. If the logical pursuit of the consequences of the ground advanced by one philosopher ends in demonstrating the incompatibility of the results with accepted truths, his view is rejected. This is the broad survey of the way in which reasoning works and of the ultimate results achieved with its help. But philosophers are not satisfied with a broad view of things and they endeavour to assess the exact contribution of each factor. Udayana, though he is a commentator of Vācaspati, does not agree with him with regard to the actual results that are achieved by reasoning. Vācaspati thinks that the service of reasoning lies in the elimination of doubt. But Udayana here differs. Udayana thinks that doubt is due to the incapacity to find out conclusive reasons in favour of one of the conflicting alternatives, and these reasons are nothing but the characteristics which belong to one

1 *Vide* chapters iv-viii.

2 aniṣṭam prasajya viparyayasy aiva sākṣān nivarttanāt...........pramāṇasy ābhyanujñātasya viśodhite viṣaye pramāṇam apratyūhaṃ pravartate.

NVTT, p. 321.

and one only of the alternatives. To revert to our old example of the doubt about the tree or man, it is certain that the object lying in the front can be determined to be a human being only by the knowledge of such characteristics, as hands and feet, which can belong to a human being and not to a tree. But does reasoning give us the knowledge of the crucial evidence? No, it is perception which supplies these data and the knowledge of the data, hands and feet, removes the doubt[1].

Udayana's position has been elucidated by Bhaṭṭa Vādīndra. Doubt, it is argued by him, is due to the lack of knowledge of the specific characteristics of the real entity, which becomes the object of doubt owing to the presentation of such common characteristics which can belong to a human being and to a tree with equal degree of likelihood. The presentation of common features is not by itself the cause of doubt, but only when it is accompanied by the lack of knowledge of the specific characteristics. Even when it is determined to be a human being, the common characteristics, which it shares with trees, such as straightness, height etc. are also perceived, but the doubt ceases by reason of the knowledge of hands and feet, which are the specific characteristics of a human being. It follows, therefore, that doubt is due to the absence of knowledge of specific characteristics, and it can be removed only by such specific knowledge. But as reasoning does not yield such specific knowledge, we have to depend upon perception or the like for the elimination of doubt[2].

Udayana for this reason abandons the position maintained by Vācaspati and seeks to account for the bearing of reasoning upon the determination of truth in a different manner. Reasoning is incompetent to remove doubt as the contents of doubt and reasoning are not opposed. The opposition of judgments is due to the opposition of their contents (*viṣayavirodha*). Now, reasoning undoubtedly comes into play when there is doubt. It seems paradoxical to assert that reasoning fails to remove doubt, though doubt is the occasion for the emergence of reasoning. It is not a fact that

1 KV, p. 260.
2 RS, p. 94.

Udayana is not conscious of this broad truth that reasoning has a bearing on the elimination of doubt. But Udayana is too minute a thinker not to recognise the absence of opposition between reasoning and doubt in respect of their contents and hence probes deeper into the problem. For instance, a man entertains doubt of the existence of fire in a place where he observes smoke. The doubt is of the form "Is the hill possessed of fire or not?" Here reasoning arises and expresses itself in the form of a hypothetical proposition, namely, "If the hill did not possess fire, it would be devoid of smoke". Certainly, the two propositions (doubt and reasoning) are not on a par in respect of the opposition of their contents. The subject-matter of doubt is the existence or non-existence of fire, and reasoning asserts that the absence of fire would entail as a necessary consequence the absence of smoke. Now, the absence of the smoke is not opposed to the presence of fire. Absence of fire is opposed to presence of fire and absence of smoke is opposed to presence of smoke. So the consequence, namely, the alleged absence of smoke being not antagonistic to the presence of fire, the reasoning in question cannot logically rebut the doubt of the presence or absence of fire which made the appeal to reasoning necessary. What is then the instrument for the removal of doubt? The answer is, it is the knowledge of the specific characteristic of one alternative. In the instance cited above, the perception of smoke as the concomitant of fire is the instrument of the removal of doubt of the presence of fire. Smoke is a specific characteristic of fire, being its necessary concomitant. Doubt of fire was engendered by the absence of knowledge of smoke as the necessary concomitant of fire. But as soon as the knowledge of smoke-as-concomitant-with-fire takes place the condition of doubt is removed. It has been stated that the cognition of common characteristics and the absence of cognition of the specific characteristic of one of the alternatives are the conditions of doubt. As has been observed before, the cognition of common characteristics occasions doubt only, when it is accompanied by the lack of the cognition of a specific characteristic, and not when the latter is present. So it is the latter condition that is the direct cause of doubt. In the particular case under consideration, the recognition of smoke as the concomitant of

fire removes the absence of the cognition of this fact, which is the specific characteristic of fire, which is the subject-matter of doubt. Thus, doubt of fire is removed not by the knowledge of absence of smoke entailed as a consequence by reasoning, but by the recognition of smoke as the concomitant of fire, which is entirely different from what is entailed by reasoning.[1]

But now a question arises. If reasoning has no bearing upon the elimination of doubt which is the *raison d'etre* of its coming into operation, what is then the nature of its service? Udayana answers the problem in the following manner. He thinks that reasoning serves to remove the desire for knowledge of the opposing alternative and not doubt. Though doubt is a necessary condition of reasoning, it is not its universal condition. Reasoning is requisitioned even when there is no doubt. For instance, a hungry man sets to eat a plate of food and a friend warns him that the food is poisoned and will prove fatal if consumed. Now, this warning, if logically stated, should be expressed as follows: "If you take the food in question, you will die", which is the form of the statement in which the reasoning is necessarily expressed. The warning here is a *reductio ad absurdum* which is the usual form of reasoning. Here no question of doubt arises, but nevertheless the employment of reasoning is effective. What is its effect? The answer is that reasoning here removes the hungry man's desire for the consumption of the food under consideration by showing the undesirable consequences that would necessarily follow the act. That reasoning serves to demonstrate an undesirable consequence of the acceptance of an alternative course of action has been stressed by Vācaspati Miśra. Udayana accepts this finding of Vācaspati; but whereas the latter makes such demonstration of an undesirable contingency the instrument for the elimination of doubt, Udayana, in conformity with the instance of the poisoned food where reasoning comes into play even in the absence of doubt, asserts that the actual result produced by reasoning is the removal of desire for the opposite course of action only. Even where doubt furnishes the occasion for resort to reasoning, the service of reasoning consists

1 See RS, p. 92.

in the removal of desire for the opposite alternative, though removal of doubt ensues as a remote consequence. In the case of doubt about the existence or non-existence of fire, reasoning serves to remove the desire for knowledge of the non-existence of fire by demonstration of the undesirable consequence, namely, the absence of smoke. The doubt of the possibility of the non-existence of fire is removed by the knowledge of fire through the knowledge of the presence of smoke-as-concomitant-of-fire.[1]

A difficulty has been raised in this connexion. If opposition of contents be the determinant of logical opposition between two propositions, the opposition of reasoning to the desire for knowledge cannot possibly be regarded as a case of logical opposition. If the opposition in question be looked upon as a case of causal opposition as illustrated by the opposition of a disturbing noise to study, there is no reason for combating the view of Vācaspati Miśra regarding the opposition of reasoning to doubt. If observation of concomitance in presence and absence between reasoning and cessation of desire is appealed to as proof of the opposition, the same can be availed of by an adherent of Vācaspati's view. That doubt is removed, if there is reasoning as an antecedent fact, is a matter of observation. Udayana's objection was to the effect that there was no logical opposition between doubt and reasoning. But he gives up the plea of logical opposition when he makes reasoning the condition of the removal of desire. Besides desire has no logical value. If the opposition be shifted to one between reasoning and the judgment which is the cause of desire, it may be given a logical character. The judgment 'poisoned food is fatal to human life' is the cause of the cessation of desire for such food. Now, what is desired is, in the first place, something which is desirable on its own account, for instance pleasure and the like; and, in the second place, a thing is desired on account of its consequences which are

1 aniyataketyupaṇipāte niyatakoṭiparigrahasya yadyarthatvāt...........kathaṃ tarhi pramāṇam apy anugṛhṇīyāt aniyatecchāviccheden ety uktam. na hi kuryāṃ na kuryām ity aniyatacikirṣaḥ kartā kiñcit karoti. aniyatecchāvicchedaṃ kathaṃ kuryād iti cet? aniṣṭāpattinivṛttatvād asya. yathā saviṣānnabhakṣaṇodyatasya saviṣam idam yadi bhakṣayiṣyasi mariṣyasi ty aniṣṭāpatter na bhakṣayeyam iti tatsmaraṇam eve cchāvicchittiḥ. KV, p. 260.

desirable for their own sake. Thus wealth is desired because it is a means of securing happiness. Similarly aversion or cessation of desire has reference to a thing, which is undesirable on its own account, or which is an instrument of an undesirable consequence. The relation between cessation of desire and knowledge of an undesirable consequence is thus necessary and universal. When reasoning demonstrates an undesirable consequence to follow from a belief or a course of action based upon such belief, the opposition of the latter to desire for entertaining such a belief or consequential action is only an instance of this universal truth. So the opposition is not on a par with the opposition between a frustrating agent and an expected happening. The opposition of *reasoning* with doubt as Vācaspati maintains would be a case of specific causality which was not deduced from a general proposition. But the opposition of the untoward consequence, shown by reasoning with desire for the belief or the action proceeding from such a belief, is one which is deducible from the general proposition enunciated above, viz. 'that which is undesirable *per se* or produces an undesirable consequence is the object of aversion.' Thus Udayana's contention seems to be more cogent than that of Vācaspati Miśra.

What is then the cause of the removal of doubt according to Udayana? The question can be answered by an analysis of the conditions of doubt. To take a concrete example, let us suppose that a man sees smoke issuing from a hill, who would naturally infer that smoke was due to fire. But meanwhile a doubt about the necessary relation between fire and smoke crops up and prevents the inference. The doubt is of the form that the smoke in question may be possible in the absence of fire. Here reasoning comes to the aid. The man argues that if smoke be not the effect of fire as it is not known to be the effect of anything else, the smoke would be an uncaused effect—which is an absurdity. The realization of this absurdity removes the desire for belief in a fireless smoke. In other words, the belief or rather the desire for belief in the possibility of fireless smoke which created a deadlock is eliminated by reasoning and on the removal of this impediment, the natural inference that the hill is on fire takes place without a hitch. And the inference of fire removes the doubt. Thus according to Udayana doubt is always eliminated by definite

knowledge which accrues from the relevant conditions of knowledge called *pramāṇa* and the reasoning is called into request to eliminate an obstacle, which always is in the form of a diversion caused by an enquiry after a false possibility[1].

1 We have taken sufficient pains to elucidate Udayana's position here which deserves scrutiny firstly on account of its originality, and secondly because it has not been properly represented even by authors of repute. Varadarāja, the author of the *Tārkikarakṣā*, first correctly states in the *Kārikā* the position of Udayana that reasoning is of service in that it eliminates desire for the opposite belief. But in his comments he surrenders this position and asserts that reasoning is the instrument for the removal of doubt of the contrary possibility, which is the position of Vācaspati Miśra and has been elaborated by Śrīvallabha, the author of the *Nyāyalīlāvatī*. It is painful to observe that Mallinātha, the commentator of the *Tārkikarakṣā*, has made the confusion worse confounded. *Vide Tārkikarakṣā*, Chapter I, pp. 196-97.

CHAPTER II

THE POSITION OF ŚRĪVALLABHA—THE AUTHOR OF THE *NYĀYALĪLĀVATĪ*

After Udayana Śrīvallabha has devoted elaborate consideration to the problem as to how reasoning comes to the aid of an accredited instrument of knowledge. Śrīvallabha comes to the conclusion that reasoning resolves doubt which frustrates the operation of an instrument of knowledge. Udayana's position has been subjected to an elaborate criticism. To start with, Śrīvallabha tentatively suggests that the application of reasoning may result in one of these three consequences, namely (1) the cessation of desire for belief in the opposite (*vipakṣajijñāsānivṛtti*): (2) cessation of the doubt about the opposite (*śaṅkānivṛtti*): (3) the weakening of the opposite alternative (*tannyūnatā*). Now the first alternative is not entertainable. There is absolutely no necessity for the cessation of such desire as it does not and cannot operate as an obstacle to the operation of an instrument of knowledge[1]. In fact desire has no bearing upon the resultant knowledge which follows as a matter of necessity when the conditions of such knowledge are present. For instance, a man desiring to perceive a jar perceives in fact a piece of linen because it is there. The desire for knowledge of a different thing here does not prevent the knowledge of another thing. Nor can it be maintained that such a desire would be an obstacle in the case of inference, because the combined knowledge of the major premise and the minor premise is all that is necessary for inference, and desire for one or the other kind of knowledge has nothing to do with it. It might be maintained with some plausibility that desire for the opposite knowledge serves to frustrate the enquiry for the probandum, the knowledge of which is achieved by inference. So here reasoning comes into request and by eliminating such obstructive desire makes the realization of inference

1 nanu kim etasya phalam? vipakṣajijñāsānivṛttiḥ śaṅkānivṛttir vā tannyūnatā vā? nādyaḥ, anumānād eva tatsiddheḥ. NL, pp. 514-15.

possible. But this advocacy of the utility of reasoning does not seem to be based upon an undeniable logical or psychological necessity. The immediate cause of inference is always the combined knowledge of the major and the minor premises and this has nothing to do with desire. The position could be accepted if it were shown to be the case that desire for knowledge of the probandum was the necessary condition of inference. If this were the case, desire for the opposite knowledge would certainly operate as a bar to the materialization of inference. But such a desire cannot be made out as the universal and the necessary condition of inference, because there is such a thing as unpremeditated inference, as in the case of the inference of clouded sky from hearing a thunder-clap. So reasoning cannot be of use by the removal of the desire for knowledge of the opposite, which is the position of Udayana[1].

The second alternative is also rejected by Śrīvallabha. The doubt about the probandum is resolved by inference. If a reasoning were to effect the removal of doubt there would be no necessity for resorting to inference. Nor can reasoning be supposed to effect the certitude of the removal of doubt achieved by inference. For inference is not only competent to eliminate doubt, but also to produce an assurance of such removal[2].

The third alternative is equally unworthy of acceptance. Even if it is granted that reasoning serves to weaken the possibility of the false alternative being the truth, the result would be at most a heightened presumption for the true alternative. But this would not amount to certitude unless the possibility of the weakened alternative is removed with absolute certainty. This can be done only by inference. If inference is necessary for the elimination of the attenuated doubt about the false alternative, it can with equal efficiency eliminate even the stronger doubt. Such being the case, the necessity of reasoning for the diminution of the strength of doubt is not only problematic, but also superfluous. In this way the three consequences alleged to be the results of the application of reasoning are rejected by Śrī-

1 *Vide supra*, p. 12.

2 na dvitīyaḥ. anumānavaiyarthyāt. niścayārthaṃ tad iti cet? na. tata eva śaṅkānivṛtter api siddheḥ. NL, pp. 516-17.

vallabha[1]. It deserves to be noted that the first view rejected by Śrīvallabha is the position of Udayana, which we have explained already at length[2]. The second view criticized is the position of Vācaspati Miśra. Vācaspati has explicitly stated that a cognitive instrument is thwarted from producing certitude of its object, if the doubt of the contradictory of the object of proof crops up in the mind. But when this doubt is resolved by reasoning by demonstration of absurdities in the opposite possibility, then the cognitive instrument in question succeeds in achieving its objective[3]. The third view seems to be representative of Jayanta Bhaṭṭa's position. Jayanta Bhaṭṭa has stated that reasoning serves to produce a strong presumption in support of the probandum. The implication of this strong presumption is the diminution of the probability of the opposite alternative, which is criticized in the *Nyāyalīlāvatī*[4].

Śrīvallabha shows further that reasoning cannot be regarded as the necessary function of inference. Inference is certainly an instrument of knowledge. An instrument is defined to be that which exercises a function or operation. Function or operation is again defined to be one the presence of which is necessary for the production of the effect, for which the instrument is resorted to. It follows that an instrument cannot produce its effect if it is destitute of exercise of the same function. An example will make the position clear. An axe is an instrument for cutting a tree. But it can produce the effect only when it is operated by a person with a firm grasp of the hand. This manual exercise is the operation of the axe. Certainly without this operation the axe cannot produce severance of the tree. Inference, as an instrument, is nothing but the probans found in the minor term understood as necessarily related to the probandum. The understanding in question is the operation of this instrument. It is a perversion of truth to regard reasoning as an operation of such an instrument,

1 na tṛtīyaḥ. nyūnāyā anyūnāyā vā anumānanivartanīyatvena tannyūnatvāpādanavaiyarthyāt. NL, p. 517.

2 *Vide supra*, pp. 7-15.

3 *Vide supra*, p. 6.

4 sandigdhe'rthe'nyatarapakṣānukūlakāraṇadarśanāt tasmin sambhāvanāpratyayas tarkaḥ. NM, p. 8.

since the absence of reasoning does not thwart the production of the effect, namely, the knowledge of the conclusion, provided the understanding of the necessary relation of the probans with the probandum and of the subsistence of the same probans in the subject is there. Again, reasoning in the absence of such an understanding is not competent to produce the knowledge of the conclusion. So reasoning cannot have any efficiency as a function of the instrument of inference. This applies *mutatis mutandis* to the other instruments of knowledge[1]. It is worthy of notice that the criticism of this view is directed against Vācaspati Miśra and Udayana who have asserted reasoning to be the function of a cognitive instrument[2].

After having criticized the views sponsored by the previous thinkers, Śrīvallabha emphatically maintains that reasoning has no bearing upon the subject-matter of cognitive instruments by means of elimination of doubt regarding it. He is positive that if an instrument is at work doubt of the opposite (*viparyayaśaṅkā*) or a diversion of enquiry after the opposite (*vipakṣajijñāsā*) cannot prevent materialization of the resultant knowledge. In other words, he thinks Vācaspati and Udayana to be in the wrong, and he rejects the possibility of reasoning serving as a condition for elimination of obstruction of the subject-matter, which is called *viṣayapariśodhaka tarka*[3]. Reasoning is conventionally classed under two heads, namely, (1) that which removes an obstacle to the clear understanding of the subject-matter (*viṣayapariśodhaka*); (2) that which is conducive to the knowledge of the universal concomitance between the probans and the probandum (*vyāpatigrāhaka*)[4]. The first variety of reasoning sponsored by Vācaspati and his followers is rejected by Śrīvallabha. According to him reasoning is of service in the elimination of doubt about the infallibility of the relation between two terms. Take, for instance, the relation of smoke and fire. One may

1 NL, pp. 517-18.
2 NVTT, p. 54; *vide* also KV, p. 260.
3 NL, p. 518.
4 tarkaś ca dvividho viṣayapariśodhako vyāptigrāhakaś ce ti.
Din, p. 491; *vide* also NLP, p. 5.

naturally doubt that the observed association of fire and smoke is an accidental coincidence. Now this doubt is resolved by reasoning in the following way. Smoke is an event and as such must have a cause and consequently must be related by an indissoluble bond with such a cause. What can be the cause of smoke? The application of the Joint Method proves that smoke has fire for its cause, and so the relation between the two cannot be accidental. Reasoning takes a hypothetical form, namely, 'if smoke were not necessarily concomitant with fire, it could not be its effect.' If it were not the effect of anything else than fire, nor again of fire, it would be an uncaused event, which is an absurdity. Thus, reasoning by demonstrating the absurdity of the opposite possibility helps the determination of the observed relation between the probans and the probandum as an invariable and essential case of ontological necessity[1].

Śrīvallabha's views on reasoning can be summed up in brief as follows. Of the two types of reasoning sponsored by the ancients, Śrīvallabha only recognises the necessity of the second type. It is worthy of remark that Śrīvallabha has exercised a profound influence on Gaṅgeśa, the author of the *Tattvacintāmaṇi*, who has also acknowledged the necessity of the second type of reasoning only. Now the reason for rejection of the first type consists in the consideration that doubt about the subject-matter cannot be an obstacle to the deduction of the conclusion. It has been shown that desire for the opposite knowledge does not obstruct the process of inference from leading to the conclusion (*sādhyajñāna*). Doubt about the probandum also cannot operate as a bar to inference, if the knowledge of the probans-as-concomitant-with-the-probandum is at its back. In one word, doubt cannot frustrate the realization of inference, if its conditions are at work. And if there be any deficiency in the cause, which is the sum of conditions, then also the failure of inference will be due to such deficiency irrespective of the presence or absence of doubt. The later Naiyāyikas call this doubt about the probandum as doubt regarding the object of knowledge (*grāhyasaṃśaya*). Now this doubt about the object, which is to be established by inference, is asserted

1 NL, p. 518.

to possess no obstructive efficiency, and this is rather an endorsement of the position maintained by Śrīvallabha. Śrīvallabha's position seems to be based upon strong foundation. Let us elucidate it by a concrete example. Suppose, a man has a doubt about a tyrant whether he is liable to die or not. Suppose, again, that the arguer is convinced of the truth beyond the shadow of doubt that all men are mortal and that he recognises that the tyrant is a human being. The doubt about the mortality of the tyrant in question will not prevent him from reaching the indubitable conclusion, "The tyrant is mortal." The doubt is resolved by the result of inference and, though unresolved before, it could not frustrate the operation of inference. Śrīvallabha accordingly asserts that there is no necessity for appeal to any other agent save and except the conditions and resultant of inference for the removal of doubt or of a desire for knowledge of the contrary, simply because they do not interpose any obstacle in the way of inference. But though he rejects the first type of reasoning, which is supposed by the previous thinkers to be the necessary condition of the elimination of doubt or a contrary desire, on the ground of its incapacity, he still admits the necessity of reasoning as a condition of the elimination of doubt about the necessary and universal concomitance[1].

But a question pertinently arises in this connexion. Necessary concomitance (*vyāpti*) is nothing but the impossibility of the connexion being contingent. But the doubt of contingency of the relation between the probans and the probandum may be of the nature of the doubt about the object of knowledge. The problem is how and by what means the knowledge of the necessary relation, in one word, induction, is secured. The desired object of knowledge is the absence of the fallibility and the contingency of the relation. And so a doubt about this absence of contingency is on a par with the doubt about the objective of knowledge, which has been declared by Śrīvallabha to be devoid of all obstructive capacity regarding the realization of the resultant knowledge sought to be achieved. This doubt, therefore, being absolutely innocuous, does not require the service of an agent for its elimination. So reasoning of the second type also being on the

1 NL, p. 517.

same footing with the first type should be equally rejected by Śrīvallabha[1].

The truth of the matter regarding the capacity of doubt for obstruction or otherwise is to be determined by the evidence of experience. Now, an initial doubt about a truth does not prevent the realization of the truth by the pursuance of the relevant conditions of proof. There may be a doubt about the infallibility of the concomitance between any two terms, e.g. between smoke and fire. This initial doubt, far from being an obstacle to the pursuit of the condition of knowledge of concomitance, namely, the observation of concomitance in agreement and difference, is rather an incentive to the adoption of the procedure. But the doubt, that may arise regarding the validity of the knowledge of the necessary concomitance reached by the pursuit of the Joint Method, is certainly an impediment. Thus, for instance, the necessary concomitance of smoke and fire may be known in the form, "Smoke is not concomitant with what is not-fire, that is to say, with what is different from fire." But the truth of this knowledge may be assailed by the doubt about the possibility of the occurrence of smoke in a fireless place. Now, such a doubt can be resolved only by a *reductio ad absurdum* of such a possibility. Here reasoning is of service. Moreover, the assurance of the necessary relation may be secured only by a lack of sufficient scrutiny based on the empirical testimony of repeated experience. Thus ordinary people are convinced of the truth of the concomitance of many things, about which a philosopher comes to entertain grave doubts. The vulgar masses are not disturbed by any doubt about their belief in the concomitance of the day with the particular movement of the sun in the horizon[2]. But the scientist has dismissed this belief as untrue on the basis of data which are not accessible to an uneducated

1 NL, p. 518.

2 There is a widespread belief that sneezing on the eve of journey is an evil omen or that the number thirteen is unlucky. Such beliefs in the concomitance of the facts in question may be regarded as superstitious. And the doubt about their truth is a real doubt which can be removed only by the application of reasoning, favourable or unfavourable, resulting in the elimination of the doubt by consideration of pros and cons. The efficiency of reasoning will be evident in the resultant conviction of the truth or falsity of the beliefs.

person. Thus there may be many accepted generalizations which are liable to be called in question owing to the advance of knowledge. The truth or otherwise of such accepted generalizations can thus be tested by the help of reasoning. The question can be decided by a division of the types of doubt. The initial doubt about the truth of a universal proposition, which has not yet been proved, is not an obstacle to the realization of the truth or otherwise of the universal proposition in question. This is called in the terminology of the Naiyāyika doubt about the matter to be known (*grāhyasaṃśaya*). Such doubt is not an impediment to the future realization of the truth. But a doubt about an accepted belief, upon which a man may base a conclusion, is certainly an obstacle, for the elimination of which reasoning is called in request. Thus the position maintained by Śrīvallabha in his *Nyāyalīlāvatī* is entirely different from that of Udayana, and it has been found that a doubt as the occasion of reasoning is a real obstacle[1].

Bhagīratha Ṭhakkura, the sub-commentator of the *Nyāyalīlāvatī*, after elucidating the position of the original author, has propounded his independent views on the necessity of the first type of reasoning. Bhagīratha does not think that Śrīvallabha's summary rejection of Udayana's position is absolutely infallible. He asserts that reasoning of the first type is of service even in inference by eliminating enquiry about the opposite possibility as maintained by Udayana. It is common knowledge that the expected cognition does not take place if a disturbing agent crops up, though the full conditions of the cognition in question are at work. The favourite example with the Naiyāyika of a disturbing agent is thought of a woman. Even the combined knowledge of the premises does not result in the inference of the conclusion, if a person happens to think of a woman. That the thought of a woman or such like things obstruct the actualization of the result is due to the fact that such thought, or desire for thought, relates to an object, which is opposed to the object of the expected knowledge. The truth of the matter is the principle that thought of a contrary object is a disturbing condition, which frustrates the actua-

1 NL, pp. 517-19.

lization of the expected result. The thought of the opposite of the probandum would thus thwart the process of inference even after the combined knowledge of the premises[1]. It may be contended that there can be no such diversion of enquiry after the knowledge of the existence of the probans in the subject known to be necessarily concomitant with the probandum (*parāmarśa*). Now a diversion of the attention is supposed to be caused by doubt about the contrary possibility. To revert to our old example, let us suppose that a man perceives smoke in a hill and remembers that smoke is necessarily concomitant with fire. Is it possible that a man should come to have doubt regarding the possibility of absence of fire? A doubt of the kind can be resolved only by the knowledge of the necessary relation of the probans and the probandum. But such knowledge is *ex hypothesi* present at the time. How can then there be any doubt about the opposite alternative? The impossibility of doubt makes impossible the diversion of enquiry towards the opposite possibility, since the absence of the cause makes the absence of the effect inevitable. So reasoning has no *raison d'etre* in such a situation, as there is neither doubt nor diversion of thought produced by doubt, for the elimination of which reasoning might be held in request. If there were any doubt before, it would be expelled by the knowledge of the major and the minor premises. Indeed this has been the argument of Śrīvallabha for rejection of this type of reasoning[2].

Bhagīratha observes in reply that though doubt about the contrary possibility does not spontaneously arise after the combined knowledge of the premises and an antecedent doubt of the kind has been removed by the latter, yet the possibility of doubt, due to the operation of an opposite cognitive instrument, is not precluded. It is not universally true that the knowledge of the combined premises necessarily culminates in the knowledge of the conclusion. Were it so, contradicted

1 vastuto viṣayapariśodhakasyā'pi jijñāsānivṛttidvārā upayogaḥ. kāminījijñāsāsthale virodhiviṣayakajijñāsātvena pratibandhakatvakalpanāt. sādhyābhāvajijñāsāyā api pratibandhakatvāt. NLPV, pp. 518-19.

2 na ca parāmarśād eva śaṅkānivṛttir iti mūlanivṛttau jijñāsāyā api nivṛtteḥ kiṃ tarkeṇa iti vācyam?

Ibid., p. 519.

probans (*bādha*) or countermanded probans (*satpratipakṣa*) could not be included in the list of fallacies. Now, a fallacy is that which thwarts the realization of inference, in other words, the knowledge of the conclusion. Let us return to our previous example of contradicted probans. Suppose a person is going to argue that fire should be cold, because it is a substance, and all substances such as earth, water etc. are cold. The knowledge of the universal proposition, "All substances are cold," and of the minor premise, "Fire is a substance," is there. Suppose, again, that immediately after, the man touches the fire and feels it to be hot. The perception of hot fire prevents the inference of coldness. Here the perceptual cognition directly thwarts the inference of coldness in fire without annulling the major or the minor premise. It is not denied that the contradiction of the probandum may result in the subsequent conviction that the relation between the probans and the probandum is neither universal nor necessary. The case is the same with the countermanding reason which is known immediately after the combined knowledge of the premises. Suppose, a man thinks in the strain as follows. Impalpable things are imperishable and word is impalpable. Suppose again, that he realizes that all products are perishable and word is a product. Now the subsequent knowledge would directly prevent the inference that word is imperishable without falsifying the major and the minor premises. Though as a matter of fact the major premise comes to be realized as false, the knowledge of the falsity is rather the result and not the condition of the knowledge of contradiction[1].

Let us evaluate the results of the logical enquiry conducted in the preceding paragraphs. It has been found that the combined knowledge of the premises fails to lead to the conclusion, if it has been thwarted by knowledge of the opposite truth. What is true of knowledge of the opposite is also true of doubt about the opposite, with this difference that knowledge of the opposite permanently precludes the knowledge of the conclusion, whereas doubt or diversion of enquiry.

1 svārasikaśaṅkānivṛttāv api virodhipramāṇasadbhāvanibandhanaśaṅkāyāḥ sulabhatayā jijñāsāyā api sulabhatvāt.

NLPV, p. 519.

produced by it operates as a temporary setback. The removal of the diversion is effected by reasoning, and with the removal of this impediment the previous knowledge of the major and the minor premises leads to the knowledge of the conclusion. The interpretation of Bhagīratha Ṭhakkura seems to be the most faithful and loyal exposition of Udayana's position. Bhagīratha thus makes out that reasoning serves as an auxiliary to the condition of inference after it has set to work; that is, in other words, reasoning is regarded as a subsequent sub-organ (*uttarāṅga*) of the instrument of inference. Bhagīratha thus substantiates the claim of the first type of reasoning in opposition to Śrīvallabha who repudiated it. It is obvious that the defence of Bhagīratha has succeeded only to a limited extent. The first type of reasoning is shown to have a necessity of its own only in cases where an opposite mode of knowledge creates doubt about the object of inference and subsequently produces a diversion. The necessity of appeal to the first type of reasoning is thus limited to rare and exceptional occasions and is not universally operative. It may not be irrelevant to observe that Bhagīratha's exposition of Udayana's position is more loyal than that of Vardhamāna, who holds that reasoning serves to eliminate not only an opposite enquiry but also the doubt which is the condition of it[1]. Though he adduces reasons in support of his position, it is undisputable that this exposition runs counter to the position maintained by Udayana.

Rucidatta's position

Rucidatta, an astute logician of Mithilā noted for his originality of views and critical insight, has propounded his views on the necessity and function of reasoning in his work called *Makaranda*, a gloss on Vardhamāna's commentary on the *Nyāyakusumāñjali*. Rucidatta's interpretation differs in substantial respects from the views of Śrīvallabha and Bhagīratha Ṭhakkura, though his agreement with the latter is pronounced. Udayana maintains that doubt about the contrary of probandum is the cause of enquiry about the latter. For instance,

1 tajjanakasaṃśayasahite'ti śeṣaḥ. anyathā jijñāsāvicchede'pi saṃśayasattve vyāptyagrahāt.

NKuP, ch. III, p. 23.

suppose, that a man is in doubt whether the hill is possessed of fire or not. The doubt about the negative alternative, namely, the absence of fire, induces an enquiry for this absence of fire. But enquiry is nothing but a desire for knowledge. When a man sets about to infer the presence of fire it is natural for him to entertain a desire for the knowledge of fire and not of the opposite. Doubt again cannot be the cause of desire for knowledge. Desire for knowledge or for anything else is always induced by the knowledge that the object of desire is a means to the realization of a desired end. Now the person, who is interested in the discovery of fire, cannot be supposed to think the absence of fire to be conducive to the realization of his objective. On the contrary he should entertain a desire for the ascertainment of fire in which he is interested on account of its instrumentality in the realization of his objective. Thus, there is no logical or psychological justification for Udayana's contention that doubt induces an enquiry after the opposite alternative, and reasoning comes to eliminate such desire which precludes the knowledge of the original object of inference[1].

Rucidatta observes in defence of Udayana's position that the causal relation between any two phenomena can be ascertained only by observation of unconditional concomitance in agreement and in difference. It does not behove a man to call in question the relation of casuality on *a priori* grounds. It is true that desire of knowledge is found to be induced by the assured conviction of the utility of its object in which he is interested. But that does not prove the impossibility of any other fact being the cause of it. The charge of the plurality of causes can be averted by the hypothesis of the qualitative difference of the effects, namely, of the desire for knowledge, as induced by knowledge of the utility of a thing from that induced by doubt. That doubt produces a desire for knowledge about its object is known by the application of the Joint Method. Accordingly one should not raise a difficulty about the causal efficiency of doubt regarding desire for

1 nanu saṃśayo na jijñāsāhetuḥ, tasyā icchātvena jñāneṣṭasādhanatājñāna-sādhyatvāt. sādhyārthinaś ca sādhyābhāvajñānaṃ neṣṭasādhanam iti na tatra jijñāsā. tathā ca kathaṃ tannivarttakatā tarkasye' ti cet?

NKuPM, ch. III, pp. 4-5.

knowledge about the opposite alternative, which is one of the alternative objects of doubt. It is admitted that the emergence of a countermanding reason results in the emergence of desire for knowledge of the opposite alternative. The case of doubt is exactly on a par with the countermanding reason. As regards the contention that when the person is interested in the knowledge of fire he ought not to have a desire for the contrary, it should suffice to say that solicitude for a thing not infrequently induces a doubt about the undesirable possibility[1]. Thus has Kālidāsa, the greatest poet of India, observed that affection is apt to be apprehensive of the evil about the beloved person. According to the line of argument adopted by the opponent, Kālidāsa should have said that affection is sanguine of the welfare of the object of love[2]. Udayana's position that doubt is the cause of diversion of enquiry towards the opposite alternative thus stands unassailed.

Vācaspati Miśra thinks that reasoning is the cause of the elimination of doubt about the opposite, whereas Udayana regards it as the cause of the elimination of the resultant enquiry about the opposite. But both these views seem to be illogical, as reasoning is not opposed to doubt or enquiry in respect of the relevant subject-matter. The opposition of cognitions always takes place when one posits an object and the other negates it. But we have already shown in our exposition of the position of Udayana that there is no opposition in respect of subject-matter between reasoning and doubt. And the same lack of opposition is found in the case of enquiry and reasoning also. Rucidatta observes that though the opposition may not be logical, there can be no doubt that the opposition is factual. It is true that the application of reasoning results in the elimination of doubt, which is the position of Vācaspati Miśra, and in the elimination of opposite enquiry, which is the position of Udayana. That the elimination of doubt or of enquiry takes place after the operation of

1 anvayavyatirekābhyāṃ satpratipakṣasy eva saṃśayasyā'pi jijñāsājanakatvāt.

NKuPM, ch. III, p. 5.

2 snehaḥ pāpaśaṅki
Śakuntalā, Act IV., p. 183.

reasoning is a matter of experience. So there is no reason to doubt the causal relation between the two. We have already shown that Udayana's affirmation of opposition between reasoning and opposite enquiry is not on the same footing with the position of Vācaspati Miśra. The latter opposition has been shown to be an instance of a universal law, whereas Vācaspati's position can be explained on the postulation of a specific causal relation determined by a specific observation of concomitance in agreement and difference[1].

The *modus operandi* of reasoning as shown by Rucidatta differs from what is assumed by Bhagīratha. Rucidatta explains the procedure as follows. First a man observes smoke in a hill and then comes to entertain doubt whether there is fire in it or not. This doubt about the possibility of absence of fire induces an enquiry about it. The enquiry consists in the search for the conditions of lack of fire. So long as this diversion endures, the knowledge of the universal concomitance between fire and smoke already ascertained in the kitchen does not occur and consequently the synthetic judgment, which could be produced by the knowledge of the two premises, does not materialize. But reasoning serves to eliminate this opposite enquiry, and after this the knowledge of the universal concomitance of smoke with fire, and of the occurrence of smoke in the hill, results in the synthetic judgment (*parāmarśa*), which immediately culminates in the knowledge of the conclusion. Thus reasoning is regarded by Rucidatta as an instance of the first type set forth above. It is argued that the diversion of enquiry caused by doubt about the opposite possibility prevented the realization of the synthetic judgment, which could end in the knowledge of the conclusion. The subject-matter of the synthetic judgment is the probans-as-existent-in-the-subject. The elimination of opposite enquiry which obstructed the realization of the synthetic judgment thus amounts to an elimination of an obstruction of the subject-matter. It should not be thought that the elimination of the obstacle set forth above is equivalent to the removal

1 nanu virodhiviṣayatvābhāvāt tarkaḥ kathaṃ saṃśayajijñāsayor nivarttaka iti cet? na,...icchāyām aniṣṭapratisandhānatvenā'pi virodhitvāc ca, madhuviṣasampṛktānnabubhukṣādau tathā darśanāt.

NKuPM, ch. III, p. 5.

of doubt about the universal concomitance, which is the province of the second type of reasoning. What Rucidatta maintains is this. The doubt or enquiry about the opposite possibility is not the same thing as doubt about the universal concomitance. The certitude of the universal concomitance was already in the mind of the person concerned. But this certitude was rendered ineffectual by the diversion of enquiry and so the synthetic judgment which is the immediate antecedent of inference according to the Naiyāyika could not take place. The elimination of the obstacle by reasoning thus sets free the conditions of inference already present, which thereafter produce their natural and expected effect, namely, the knowledge of the conclusion[1].

The difference of Rucidatta from Bhagīratha is clear. The latter makes the emergence of diverted enquiry a subsequent event to the synthetic judgment produced by the knowledge of the premises, whereas the former makes it out as an antecedent occurrence to the same. Secondly, the elimination of the obstacle is explained by Bhagīratha to relate to the knowledge of the probandum, whereas Rucidatta makes it centre round the probans as the subject-matter of the synthetic judgment. The result is that Rucidatta regards reasoning as an antecedent sub-organ of the instrument of inference, whereas Bhagīratha's explanation gives it the status of a subsequent sub-organ. Rucidatta in support of his position appeals to the authority of Vardhamāna Upādhyāya, who, as reported by him, is said to assert that reasoning is always an antecedent sub-organ in the work called the *Prameyatattvabodha*. It deserves to be noted that according to Rucidatta reasoning is always an antecedent sub-organ and has two different functions, namely, (1) one conducive to the knowledge of the universal concomitance and (2) the other conducive to the realization of synthetic judgment (*parāmarśa*)[2].

1 NKuPM, ch. III, p. 5.

2 ... tad āha tatr aiva Vardhamānaḥ "tarko nyāyasya pūrvāṅgaṃ nyāyaviṣayapariśodhakatvāt, vyāptigrāhakatvāc ca" ity āhuḥ—*Ibid.*

CHAPTER III

GAṄGEŚA'S SPECULATIONS ON REASONING

Gaṅgeśa Upādhyāya is an epoch-maker in the domain of Nyāya speculations. His work the *Nyāyatattvacintāmaṇi* is an extraordinary work which created a revolution by a thorough revaluation of all the problems of realistic philosophy that had been discussed by generations of philosophers for about a thousand years and a half. The special attraction of Gaṅgeśa's work in spite of its studied brevity and consequent difficulty lies in its judicial crystallisation of the substantial results achieved by previous speculations and the avoidance of unessential details. It is perhaps the most popular work in the sense that generations of scholars and thinkers have given their minutest attention and most anxious consideration to every word of the work. There are a very few works which seem to have attracted so many commentaries and that again from scholars of all parts of India, whose labour is spread out over at least six centuries. The most illuminating commentaries and the best expository treatises have, however, been composed by scholars of Mithilā and Navadvīpa of Bengal. Latterly, however, the Bengal School came almost to monopolize the entire attention of the academic world in India. Gaṅgeśa's acute analysis of the problems and assessment of the value of his predecessors' views, coupled with his wonderful marshalling of the data furnished by the previous writers, have made his work and his name immortal. No study of the problems of Nyāya philosophy can pretend to be thorough, unless it makes a special and elaborate use of this *magnum opus* which has created a history in the domain of Indian philosophy. Its influence on the later speculations in the other branches of philosophy in India is no less pronounced than on the future development of Nyāya epistemology. These prefatory remarks are made by us to help the reader of this humble work to form an idea of the gravity and the onerous responsibility of the task we propose to undertake. We have not avoided the difficulties and we shall endeavour to make our representation as loyal as it will be

made thorough. We approach our task with full consciousness of the abstruseness of Gaṅgeśa's treatment accentuated by the fact that we shall not have the benefit of the study made by any previous writer in English or any of the modern Indian languages. Gaṅgeśa's work is a sealed book to the English-knowing public interested in philosophy. It will be presumptuous on our part to suppose that our exposition will be free from the drawbacks incidental to pioneer attempts.

In the chapter on induction (*vyāptigraha*) Gaṅgeśa institutes a thorough enquiry into the means of arriving at the knowledge of universal concomitance. Gaṅgeśa observes in the beginning that the ascertainment of universal concomitance of the probans with the probandum, in one word, induction, is made possible by the knowledge of co-association of the probans and the probandum coupled with the absence of the knowledge of the failure of their concomitance. There can be no conviction of the necessity and universality of concomitance in question if there be a doubt or conviction of the fallibility of the said concomitance. So the condition of induction can be propounded in brief, firstly, to be the knowledge of co-association of the two phenomena, and secondly, the absence of the knowledge that the said co-association is not necessary i.e., accidental. The term 'knowledge' in the second condition is used in a comprehensive sense inclusive of doubt. Now, doubt about the contingency of the concomitance in respect of the probans may be due to the cognition of common attributes coupled with the lack of the knowledge of specific attributes, which makes the determination of one of the alternative objects of doubt impossible. Secondly, the doubt of the necessity of concomitance may be due to the doubt about the presence of a *condition* (*upādhi*). The condition is that, which has by its nature necessary concomitance with the probandum, but not with the probans. So the concomitance of the probans with the probandum is really due to the presence of a condition with which the probans may be accidentally associated. Thus, for instance, the concomitance of fire with smoke (as opposed to that of smoke with fire) though observed in a large number of cases cannot be regarded as necessarily universal, as fire is associated with smoke only when the former is associated

with a carbohydrate. If fire is in contact with a carbohydrate, smoke invariably occurs. But the occurrence of smoke is due to the carbohydrate which has no necessary connexion with fire. The concomitance of fire with smoke is thus subject to the condition that carbohydrate should be associated with fire. This concomitance is thus accidental and conditional. But the concomitance, which is the condition of inference, must be unconditional, that is to say, it must be known to be due to nothing extraneous but to the intrinsic character of the probans and the probandum[1].

Now, the first kind of doubt can be removed by the definite knowledge of the specific characteristics of one of the terms. An example will make the position clear. Sound shares in common with space the characteristic of invisibility. A doubt may naturally arise whether sound will also participate in the other characteristic of space, namely, its eternity. Now, this doubt of the concomitance of sound with eternity can be set at rest by the definite knowledge of sound being a product. The latter characteristic is the differentia of sound and removes the doubt that it could be eternal. About the second kind of doubt of the concomitance of two terms, the doubt in question can be eliminated only by the demonstration of the impossibility of an extraneous condition, i.e., if it can be shown that the concomitance of the terms is due to the essential nature of the terms under consideration, and not to an external condition associated with the probans by way of accident. But how can the doubt about a condition be eliminated? In other words, how can the concomitance be proved to be necessary and integral to the essential nature of the terms? The instrument of the elimination of doubt about such a condition is reasoning, which operates as a *reductio ad absurdum* of the opposite possibility. There may be cases of concomitance, which are not assailed by doubt. The non-emergence of doubt may be due to the absence of defective knowledge, which is the universal

1 vyabhicārajñānavirahasahakṛtaṃ sahacāradarśanaṃ vyāptigrāhakam. jñānaṃ niścayaḥ śaṅkā ca. sā ca kvacid upādhisandehāt kvacid viśeṣādarśanasahitasādhāraṇadharmadarśanāt. tadvirahaś ca kvacid vipakṣabādhakatarkāt kvacit svataḥ siddha eva.

TCM, p. 662.

condition of doubt. Secondly, it may be due to the sheer failure of the opposite alternative to present itself to the mind. The absence of doubt, however, is the universal condition of the assured knowledge of the concomitance being necessary and universal. If there be the slightest tinge of doubt, inference becomes impossible. The most essential condition of inference is the unwavering conviction of the infallibility of concomitance[1].

The elimination of doubt is not equivalent to the cessation of doubt. Now doubt, being a psychical event, is made to cease by the appearance of another psychical phenomenon. The cessation of doubt as noted here is a natural occurrence and the service of reasoning is not required for the same. But the elimination of doubt should be understood to mean the elimination of the possibility of recurrence of the doubt. Such total elimination of doubt, initial or recurring, is secured only by means of reasoning. It may be objected that reasoning is founded upon similar absolute conviction of necessary concomitance between the ground (*āpādaka*) and the consequent (*āpādya*). Reasoning is a hypothetical argument, in which the consequent is shown to follow necessarily from the ground assumed on the assertion of the opponent. Suppose, a sceptic doubts that smoke is a necessary concomitant of fire (*vahnivyāpya*). Now this doubt is sought to be removed by a *reductio ad absurdum* as follows. "If smoke were not a necessary concomitant of fire, it would not be a product of fire, which it undeniably is". The effectiveness of this hypothetical argument, in which reasoning invariably expresses itself, lies in the belief in the necessary relation of the ground, namely, the absence of smoke's concomitance with fire, with the consequent, the denial of smoke being a product of fire. Now this necessary relation, on which reasoning is based, being itself a case of universal concomitance, is exactly on the same footing with the other cases of concomitance. Consequently the foundational concomitance is open to doubt. And if recourse be had to another reasoning for the elimination of the second doubt, the second reasoning would again presuppose another necessary concomitance, which will in its turn be

1 TCM, p. 662.

liable to be called in question. So the removal of one doubt would be the starting point of the emergence of an endless series of doubts. The efficacy of reasoning as an instrument for elimination of doubt about universal concomitance thus turns out to be a will-o'-the-wisp or a dangerous quagmire[1].

Let us now consider the solution of the problem as propounded by Gaṅgeśa. Gaṅgeśa does not think that the admission of reasoning would make a *regressus ad infinitum* unavoidable. Reasoning is required to eliminate doubt of the contingency of a case of concomitance. Though reasoning is at bottom itself based on concomitance, it is not inevitable that the series of doubts will proceed without limit. The limit of doubt is self-contradiction or contradiction of a self-evident truth. Reasoning is required only for the elimination of an actual doubt and will not be necessary if there be no doubt. When doubt is rendered impossible by the emergence of self-contradiction, reasoning will have no *raison d'etre*. So neither the chain of doubts nor that of reasonings will be unlimited. The charge of infinite regression as a necessary consequence of reasoning is thus unfounded[2].

It has been said that reasoning serves to eliminate doubt about the contingency of the universal concomitance. It requires to be explained how reasoning comes to remove such doubt. In other words, its *modus operandi* should be made clear. Gaṅgeśa explains the *modus operandi* of reasoning in the matter of elimination of doubt by a concrete example. Now smoke and fire are known to be concomitant. But there may be a doubt about the necessity and universality of such concomitance. In other words, it is possible to doubt whether smoke should occur in a place, e.g., a lake, which is devoid of fire, just as it is observed to occur in association with fire in a kitchen. If smoke could exist in a fireless place like a lake, its concomitance with fire would only be contingent. If, on the other hand, the occurrence

1 tarkasya vyāptigrahamūlakatvena anavasthā iti cet?

TCM, p. 675.

2 na, yāvadāśaṅkaṃ tarkānusaraṇāt. yatra ca vyāghātena śaṅkai va nāvatarati tatra tarkaṃ vinai va vyāptigrahaḥ—*Ibid*.

Vide also Nku, chapter III, p. 25.

of smoke be impossible in a fireless place, then the concomitance of smoke with fire will not be contingent or a matter of accidental coincidence. When such a doubt occurs reasoning comes in to exclude the possibility of such doubt in the following manner. Smoke is a product and as such must have a cause of its own. A product must be caused either by fire or something other than fire. This holds good of all products. It cannot be the case that a product will be the effect of neither fire nor not-fire, i.e., something other than fire, because this would only mean that the product under consideration is not a product, which is a contradiction in terms. Now smoke is a product and as such cannot be considered to be the effect of neither fire nor not-fire. So the doubt about smoke cannot be of the form stated above. If smoke be not the product of either fire or not-fire it cannot be regarded as a product at all. But smoke, having a definite time of occurrence, cannot be other than a product. The doubt about its being a product or not is thus precluded by contradiction of an undeniable truth[1].

Let it be accepted that doubt about smoke being a product is impossible. But it may possibly be doubted in the first place, that, though a product, smoke is the effect of a cause which is different from fire; in the second place, smoke may be thought to be occasionally the product of fire and occasionally to be the product of something else; in the third place, it may be thought to be a product without any cause. The doubt, as set forth just now, is thus seen to alternate among three possibilities. The second alternative is based on belief in the possibility of a plurality of causes and the third assumes the possibility of uncaused production. Both these alternatives are shown to be impossible on account of contradiction. The first alternative in which smoke is believed to be the product of something else than fire is equally liable to be dismissed on the ground of self-contradiction[2].

1 tathā hi dhūmo yadi vahnyasamavahitājanyatve sati vahnisamavahitājanyaḥ syān no tpannaḥ syāt.

TCM, p. 675.

2 ... kiṃ dhūmo'vahnher eva bhaviṣyati? kvacid vahniṃ vināpi bhaviṣyati? ahetuka eva vā utpadyate? iti śaṅkā syāt, sarvatra svakriyāvyāghātaḥ syāt.

Ibid., p. 676.

The usual organ for ascertaining causality is the Joint Method. If the causal relation between two events is ascertained by the observation of the unconditional concomitance in agreement and in difference, a subsequent doubt would involve contradiction of an established and well-founded belief. Let us consider the case of smoke and fire. That fire is the cause of smoke is established by the observation of the concomitance of smoke with fire in presence and in absence. Smoke has been repeatedly observed to be associated with fire and never where fire is absent. It is invariably seen to be the case that when a man wants to produce smoke for the expulsion of mosquitoes, he fetches fire and puts combustible substances in it. It is preposterous to suppose that such a person can entertain doubt that smoke is not the effect of fire. The regular adoption of fire for the production of smoke is incompatible with such doubt. If doubt were possible in such a case, the unfaltering movement towards fire would be impossible. A man's activity is caused by a volitional urge, which in its turn is generated by an unwavering belief. It is unthinkable that a man would doubt that A is the cause of B and at the same time unhesitatingly resort to A for the production of B. The contradiction of the behaviour and doubt is quite obvious. So doubt cannot be entertained in such a case. This proves the untenability of the charge that if necessary concomitance were only ascertained by reasoning, there would crop up an infinite series of doubts and reasonings, the latter being based upon a belief in necessary concomitance in each case. Reasoning, it has been observed before, is necessary only when there is doubt. But when doubt is finally set at rest by self-contradiction, reasoning would have no necessity of its own. Thus doubt is not infinitely possible and consequently the appeal to reasoning for rebutting doubt is not necessary *ad infinitum*[1].

Gaṅgeśa's view as recorded here is substantially a reproduction

1 yadi hi gṛhītānvayavyatirekaṃ hetuṃ vinā'pi kāryotpattiṃ śaṅketa, tadā svayam eva dhūmārthaṃ vahneḥ, tṛptyarthaṃ bhojanasya, parapratipattyarthaṃ śabdasya co 'pādānaṃ niyamataḥ kathaṃ kuryāt? ...tad idam uktaṃ tad eva hi āśaṅkyate yasmin nāśaṅkyamāne svakriyāvyāghāto na bhavatī 'ti.

TCM, p. 676.

of the arguments adduced by Udayana in the *Nyāyakusumāñjali*[1] in refutation of the scepticism of the Cārvāka Materialists. But Udayana's defence of the validity of inference and of the possibility of induction has been subjected to destructive criticism by Śrīharṣa in his work, the *Khaṇḍanakhaṇḍakhādya*. Gaṅgeśa's contribution to logic consists in the attempt to rebut the criticism of Śrīharṣa. We shall now consider the objections of Śrīharṣa to Udayana's position and the defensive arguments propounded by Gaṅgeśa to rebut the contention of Śrīharṣa.

Śrīharṣa raises a query about the cogency of practical behaviour serving as an impediment to the emergence of doubt regarding the necessity of concomitance. Udayana thinks that the sceptic's behaviour is a contradiction of the aforesaid doubt. But, what is the nature of contradiction constituted by behaviour? Śrīharṣa asserts that this contradiction is nothing but the mutual opposition of doubt and behaviour. Opposition, again, is only a case of universal necessity of the incongruence of two terms. In other words, opposition involves that the terms under consideration must not occur in the same substratum as a matter of universal necessity. But this universal absence of concomitance, which is the condition or the essence of mutual opposition, is itself a case of universal concomitance. The difference of the latter from the usual cases of concomitance, e.g. between smoke and fire, is this that the latter holds between two negative terms, whereas the former is one between two positives. The difference of the nature of terms, however, is irrelevant to the determination of the question of universal concomitance. The fact remains unchallenged that when Udayana seeks to avoid the charge of infinite regress by appeal to contradiction, he only assumes another case of universal concomitance as the solvent of the problem. But the solution only culminates in the emergence of another problem. Let us revert to the old example of smoke and fire and apply the criticism of Śrīharṣa. Udayana and his adherent Gaṅgeśa maintain that doubt about the necessity of the concomitance of smoke and fire is ultimately resolved by the contradiction

1 NKu, chapter III, pp. 23-25.

furnished by the volitional activity of the person regarding smoke and fire. Śrīharṣa thinks that this contradiction lies in the supposed incompatibility of the activity with doubt of the necessity of the concomitance of smoke and fire. The implication of the mutual incompatibility of doubt and activity is that there is a necessary concomitance between activity and absence of such doubt. So the so-called contradiction transpires to be a belief in another necessary concomitance. And a philosopher, who wants to be satisfied about the possibility of the knowledge of universal concomitance, is only sought to be silenced by a show of necessity. It is conveniently ignored that the doubt raised is not confined to a particular case of concomitance, but extends to concomitance as a universal and necessary proposition. If the doubt about a particular concomitance be sought to be satisfied by the show of another concomitance, it would only result in the shifting of the centre of dispute. The second concomitance, which is the foundation of the first concomitance, would equally be liable to doubt. And if another concomitance in the shape of contradiction be put forward in defence, that would also fail to effect an improvement, being equally subject to doubt. Udayana sought to avoid infinite regression entailed by reasoning by the evidence of practical behaviour pointing to a contrary belief. But this contradiction by practical behaviour has turned out on enquiry to be itself an assertion of another necessary concomitance. So this is not a solution of the problem. Śrīharṣa's contention is that it is not humanly possible to be convinced of the universal and infinite repetition of concomitance of two phenomena, observed in a limited number of cases, in future time and remote places. Udayana trots out the plea of contradiction as a means of the knowledge of universal concomitance. But contradiction itself being a case of universal concomitance is equally open to doubt. The fact, that one is a case of concomitance of positives and another is a case of concomitance of negatives, does not make an appreciable difference so far as the epistemological problem is concerned.[1]

We have considered at length the contention of Śrīharṣa and we

1 KhKh, pp. 677-93.

now propose to examine and elucidate the answer given by Gaṅgeśa to Śrīharṣa's doubt. Gaṅgeśa asserts that the interpretation of Udayana's position by Śrīharṣa is unfair and illegitimate. Udayana does not mean that contradiction involves only a case of concomitance of negations of two incongruous elements. Udayana's statement is crystal clear. He simply affirms that practical activity *per se* constitutes contradiction of the doubt about the necessity of concomitance and this makes such doubt impossible. Udayana's intention can be elucidated as follows. It is absurd that a man should doubt whether smoke be the product of fire and at the same time should seek for fire whenever he feels a necessity for smoke. The inconsistency of the activity with the doubt is obvious and does not require an elaborate logical apparatus to make itself felt. Udayana only lays stress upon this inconsistency which is self-evident. He is quite sure that the exposure of the absurdity involved in plain self-inconsistency constitutes a refutation of the alleged doubt. He does not take pains to prove this absurdity as he is convinced of the truth that absurdity cannot be refuted like truth. It is worthy of remark that the doubt about the causal relation of smoke and fire is ultimately resolvable into doubt about necessary concomitance, since causality is only a species of necessary concomitance. Although Udayana states that the doubt relates to the causality of smoke and fire, he cannot but intend that the doubt is of the necessary concomitance. Contradiction by volitional activity of the doubt of causal relation, as shown by Udayana, should thus be understood to relate to the doubt of the necessary concomitance. The position, which Udayana and Gaṅgeśa are interested to establish, is that doubt about necessary concomitance is resolved by reasoning; and a further doubt about the foundation of reasoning, which is itself a case of necessary concomitance, is precluded by the awareness of absurdity involved in such doubt[1].

1 etena vyāghāto virodhaḥ sa ca sahānavasthānaniyama iti tatrā'py anavasthe' ti nirastam. svakriyāyā eva śaṅkāpratibandhakatvāt. ata eva
"vyāghāto yadi śaṅkā' sti na cec chaṅkā tatas tarām.
vyāghātāvadhir āśaṅkā tarkaḥ śaṅkāvadhiḥ kutaḥ".
iti Khaṇḍanakāramatam apy apāstam. na hi vyāghātaḥ śaṅkāśritaḥ, kintu svakriy aiva śaṅkāpratibhandhike' ti.
TCM, pp. 719-22; *vide* also KhKh, p. 693.

Gaṅgeśa puts forward a further consideration against Śrīharṣa's contention about the impossibility of inductive knowledge. If universal concomitance cannot be ascertained on account of the inevitability of infinite regression as alleged by Śrīharṣa, the removal of doubt by observation of specific characteristics would become impossible. The elimination of doubt in such cases is a matter of universal experience. To return to the classical example of doubt about the man- or-tree, we have already found that the doubt is resolved by the knowledge of hands and feet or branches and leaves, the specific characteristics of man and the tree respectively. But what is the logical necessity that the doubting person ceases to have doubt when he observes either the hands and feet or the branches and leaves in the object of doubt lying ahead? It is nothing but the unmistakable knowledge of the necessary concomitance between a human being and hands and feet, or between a tree and its branches and leaves, which are called specific characteristics. Knowledge of a specific characteristic removes the doubt because it is in essence the knowledge of a necessary concomitant (*vyāpyadharma*). What is not a necessary concomitant is not a specific characteristic, e.g., the tapering height, which is common to both tree and man, the terms of doubt. Thus not only metaphysical doubt about the necessity and universality of causality, but also such ordinary doubts of every day experience as illustrated by the case of man and tree, will turn out to be impossible of elimination, if the knowledge of universal concomitance remains unrealizable by us. This is certainly scepticism *in excelsis*. But such scepticism, which makes even ordinary activity impossible, cannot be regarded as a serious obstacle to the pursuit of philosophical speculations[1].

1 We cannot help adverting to a point of epistemological interest which arises in this connexion. Later Naiyāyikas, for example Mathurānātha Tarkavāgīśa and others, hold that the resultant knowledge, either of the man or of the tree as the case may be, is perceptual and not inferential. It is true that the conditions of perception and of inference are equally present in such a situation. But mere operation of the sense-organ is incompetent to deliver the decisive knowledge that it is a tree or a man, unless and until the knowledge of the specific characteristics as the necessary concomitant of either of them supervenes. That such knowledge is of the nature of the synthetic judgment (*parāmarśa*)

We cannot conclude our discourse here without adverting to one or two sage observations made by Gaṅgeśa in this connexion. The efficiency of reasoning as an organ of induction (*vyāptigrāhakatarka*) comes in evidence prominently when the concomitance of the terms is repeatedly observed and ascertained. It cannot be realized that smoke cannot be the product of anything else than fire, if the repeated knowledge of their concomitance is not at the back of our mind. A solitary observation of concomitance of smoke and fire is not adequate to the realization of its universality and necessity. But it should not be supposed that repeated observation by itself has got any special efficiency with regard to the knowledge of universal concomitance. Repeated experience only prepares the ground for the application of reasoning. The Buddhist logician thinks that the knowledge of causality by itself makes the knowledge of universal concomitance possible. But universal concomitance, as has been observed by the Buddhist himself, is not exhausted by causal relation. Observation

of the necessary concomitance and of the minor premise does not admit of doubt. It is also universally admitted that the immediate consequence of such synthetic judgment is inference. It seems incongruous on the part of the later Naiyāyikas that they should believe the resultant knowledge after doubt to be an exceptional case, which it must be if it be perceptual. It is worthy of remark that the older Naiyāyikas regard such cognitions as inferential in character and in this they are more consistent than their successors. It is remarkable that Vardhamāna Upādhyāya endorses the view of the older Naiyāyikas in his *Pariśuddhiprakāśa* (*vide* p. 115). The older view has the further merit of effecting an economy in logical thought. It ensures the uniformity of causal relation in that it does not make a reservation to the causality of the combined knowledge of premises in regard to inference. This reservation, has, however, been made by the later Naiyāyikas who think that the conditions of perception prevail over those of inference, when the object of cognition is self-identical. But this seems to be an unwarranted innovation. Moreover the later Naiyāyikas cannot place implicit faith in the infallibility of the Law of the Uniformity of Nature, if an accredited cause be admitted to produce an unwonted effect. The Naiyāyika at any rate cannot be a party to such a confession of failure of the causal law. The Vedāntist makes a verbal proposition an instrument of perceptual intuition in exceptional cases and the Naiyāyika has accused the former of disloyalty to the Law of Uniformity. This accusation can come with ill grace from the mouth of a neo-logician who pays scant respect to the law in the case of the knowledge emerging after doubt.

of the concomitance in agreement or in difference or in both where possible is no doubt the organ of the knowledge of causality. But, as we have seen, an initial or a subsequent doubt may frustrate the knowledge of causality and for the elimination of doubt we have to call in aid the resources of reasoning which works as a *reductio ad absurdum*. Observation of concomitance is the accredited organ of induction. But it is rendered inoperative and its findings are neutralized by the emergence of doubt about its universality and necessity. Reasoning eliminates the doubt and thus removes all obstacles from the path of the aforesaid organ. Repetition of instances is only necessary for the certitude of brute concomitance and by itself has no particular bearing upon the knowledge of the concomitance being necessary and universal[1].

Gaṅgeśa further admits the possibility of reasoning being correct or incorrect, right or wrong. An incorrect reasoning is only a simulation of true reasoning. An incorrect reasoning cannot give us authentic knowledge of universal concomitance which can be had with the aid of correct reasoning.[2] The case of reasoning is exactly on a par with the case of the knowledge of universal concomitance. If the universal concomitance as stated in the major premise be based on a wrong or imperfect finding, the resultant inference cannot but be wrong. It is necessary to exercise sufficient caution to determine that the reasoning applied is correct or otherwise. The possibility of reasoning going astray does not however give a warrant for scepticism. It is also given to us to discover our mistakes and to correct them, just as it is natural to make mistakes. We reserve the consideration of correct and incorrect reasonings and their conditions and results for a subsequent chapter[3].

VIEWS OF THE OLDER NAIYĀYIKAS

We have already considered the solution offered by Gaṅgeśa Upādhyāya in the *Tattvacintāmaṇi* of the problem of infinite regress

1 TCM, p. 722.

2 sattarkād vyāptipramā tadābhāsāt tadapramā.

Ibid., p. 724.

3 See chapter x.

urged by Śrīharṣa as the inevitable consequence of the application of reasoning. Let us now consider the views of older Naiyāyikas as recorded by Gaṅgeśa. It was admitted by the predecessors of Gaṅgeśa that reasoning is instrumental in the ascertainment of universal concomitance. It was also acknowledged by them that reasoning itself is based upon the knowledge of necessary concomitance between the ground (*āpādaka*) and the consequent (*āpādya*). There may be a necessity for resorting to another reasoning, if the necessary concomitance between the ground and the consequent requires to be ascertained for the first time. In plain language the position may be stated as follows: "If the universal concomitance between two terms be subject to doubt, resort to reasoning is necessitated for the elimination of the doubt; and if the credentials of the reasoning again be called in question, resort to another reasoning will be inevitable for the removal of doubt about the necessary concomitance, on which it is founded." But this does not mean that the process will go on indefinitely. Doubt about the necessary concomitance of the ground and the consequent can occur only when such concomitance is explicitly felt. But if the said concomitance be implicitly present in the mind or only recalled from the previous knowledge of it, then there can be no doubt. In such circumstances one reasoning alone will suffice for the ascertainment of the necessary concomitance between the probans and the probandum, since the foundational concomitance of reasoning is not subjected to doubt. The position maintained is based upon the postulate that doubt is possible only with regard to an original belief and not when the same is recalled by memory. It seems to be psychologically correct. In support of their position the older Naiyāyikas cite the example of the original volitions and activities of an infant. The infant's impulse to suck the mother's breast or the tendency to avoid a fall from the mother's lap are cases in point. The activities in question are possible because of the knowledge that food causes satisfaction of hunger and that fall causes pain. Certainly the knowledge of these truths, which are cases of necessary concomitance of cause and effect, cannot be supposed to be *ad hoc* discoveries, as the infant had no occasion for such experience in its present life. Such knowledge, therefore, should be regarded as the legacy of past experi-

ence of past lives. And as these truths are implicitly felt or recalled, doubt cannot arise[1].

The cogency of the argument will not be admitted by modern psychologists who would explain these biological activities as automatic and instinctive, which take place without being premediated by definite knowledge. But Indian philosophers have all along insisted that instinctive activities are not blind impulses of nature which have no psychological backing. It is not open to dispute that what was once a matter of elaborate process of discovery becomes by repeated habit a natural possession and the chain of psychical processes, which were necessary to bring it into being, is rendered superfluous. Even instinctive activity must have an original belief for its cause, though habit tends to make us forget or ignore the nature of its genesis.

The logical validity of the position is not, however, liable to question on the ground of the dubious origin of instinctive activities. Other instances of habitual inferences and customery beliefs in the necessary concomitance, on which such inferences are based, may be utilised for establishing the contention of the older logicians. We shall find reasons in the course of our enquiry to dispense with this ancient theory. But we have thought that a consideration of this respectable theory, however inadequate it may be, is necessary for the understanding of the process of evolution of logical thought in India. Gaṅgeśa has given his reasons for rejecting the old theories and we shall explain them later on. We now propose to discuss the views of some other schools of thinkers which have been recorded by Gaṅgeśa in the *Tattvacintāmaṇi*.

Gaṅgeśa has again referred to the views of an older school of logicians who have sought to solve the problem of infinite recurrence of doubt by appeal to psychological evidence. They assert that it is not universally true that the necessary concomitance underlying reasoning will be subjected to doubt as a matter of necessity. Now there are causal relations, which are accepted to be true on the evidence of beliefs current from time immemorial. When a reasoning is

1 TCM, p. 731.

founded upon such a belief there is no possibility of its being assailed by doubt. The view recorded here seems to be an anticipation of Descartes' advocacy of innate ideas. It is stressed here that there are certain convictions ingrained in our very mental constitution and psychologically speaking, no doubt can be entertained about their truth. When a reasoning is immediately based upon such beliefs or can be logically shown to be derived from such beliefs in ultimate analysis, the necessary concomitance as the foundation of such reasoning cannot be made an object of doubt. Thus when an accepted consequence is shown by reasoning to necessitate the admission of a condition which invalidates an established position, that operates as a final *reductio ad absurdum*; and a further emergence of doubt of the validity of such a *reductio ad absurdum* is rendered impossible because of its being directly or indirectly based upon such an irresistible conviction. What is true of inherent beliefs in causality is also true of the relations of opposition, the truth of which is equally accepted as a matter of innate conviction. The fact, that such beliefs are ingrained in and integral to the very make-up of the human mind, makes such beliefs the universal property of all men. So the very statement of such a proposition makes it acceptable to all[1].

But Gaṅgeśa does not accept this psychological solution as satisfactory. He admits that there are universally accepted beliefs, but he does not agree that their universal acceptance constitutes an evidence of their ultimate truth. There may be innate beliefs regarding a specific causal concomitance or a specific opposition being universally valid; psychologically considered, there may not be any spontaneous doubt about their validity. But that cannot satisfy a philosopher who wants to know the logical foundation of such beliefs. The beliefs in question can be accepted as logically valid if they can be shown to be proved by an accredited cognitive organ. The sheer length of time, or the numerical strength of the adherents of such beliefs, cannot be accepted as equivalent to logical proofs. There must be a valid cognition of the proposition at bottom. Now what is

1 yat tu anādisiddhakāryakāraṇabhāvavirodhādimūlāḥ kecit tarkā iti.
TCM, p. 731.

the nature of such cognition? The consideration of probability makes the admission almost inescapable that it cannot be anything but inference. But inference is based upon necessary concomitance and necessary concomitance is always liable to doubt, for the elimination of which recourse must be had to reasoning. And that will only open the flood-gate of doubt, since reasoning depends for its validity upon a belief in a necessary concomitance, which will never be exempt from doubt, unless it is removed by something other than reasoning[1]. Gaṅgeśa following Udayana has shown that it is self-contradiction, which is different from reasoning, that can finally remove all doubts.

The view which has just been considered seems to be very old. It has also been recorded by Śrīharṣa. Gaṅgeśa only dittoes the criticism that has been propounded by Śrīharṣa. But the criticism of Śrīharṣa is more elaborate. Śrīharṣa observes that even a traditional belief handed down from undated past and shared by generations of men does not give it a privileged position. The question is whether the belief is valid or not. If it is valid, the magnitude of the time of its currency and duration or the superiority of number of the persons entertaining it has no logical relevancy to the question of its truth. Even the valid cognition of one man will prove the validity of a proposition. If however the belief be universally current, still it cannot be accepted to be true, unless an independent proof of its validity can be produced. It is not a fact that because a belief is current from time immemorial or shared universally by the largest majority of men, it must be true merely for that reason. In logic at any rate the rule of majority cannot command allegiance. People are accustomed to think their bodies as their real selves. So when a person is assaulted by a ruffian, he lodges a complaint in a law court to the effect that he himself has been assaulted. Śaṅkarācārya has proved that even philosophers are not immune from the superstition, so far as their activity and conduct are concerned, that the self is identical with the body. The belief is ingrained in the animal mind

1 tatra pramāṇānuyoge 'numāna eva paryavasānāt. na ca vyāptigrahānyathānupapattyai va tarkasya anādisiddhavyāptikatvajñānam iti vācyam. anupapatter apy anumānatvāt.

TCM, p. 731.

and is really universal. But the universality of the belief or the infinitude of the time of its currency does not vest it with the status of truth. So the contention of the older Naiyāyikas that doubt is not possible with regard to such beliefs cannot be accepted as necessarily and universally valid. The question of doubt in philosophy is not a question of psychology or practical behaviour. It is always logical in character and as such can be refuted by logical considerations alone. Gaṅgeśa recognised the justice and cogency of Śrīharṣa's criticism[1] and he has reproduced it faithfully.

Gaṅgeśa has referred to a class of Mīmāṃsists who held that observation of concomitance alone was sufficient to prove the necessity and universality of the relation between two terms. Accordingly they did not acknowledge the necessity of reasoning for the elimination of doubt regarding the necessity and the universality of a concomitance. They did not think such doubt or the condition of doubt to be an obstacle to the realization of necessary relation by means of observation of concomitance. Doubt of the necessity of the relation was thus dismissed as an ineffectual and innocuous event and the employment of reasoning for the removal of such doubt was deemed a superfluity[2].

Gaṅgeśa observes that the view smacks of a dangerous sophistry. If the view is followed with consistency and logical exactitude, the result will be the impossibility of belief in the validity of inference itself. If the unfailing observation of concomitance were regarded as the proof of its universality and necessity, inference would have no *raison d'etre*. In every case of contemplated inference the observation of the unfailing concomitance of the probandum with the difference of the subject (*pakṣabheda*) outside the subject (minor term) would operate as a bar. Suppose a man sets about to prove the existence of fire in a hill on the observation of smoke. But the inference will be precluded by the knowledge of another concomitance. Fire has been

1 anādisiddhavyāptikās te tarkā iti cet? na, tadbuddheḥ pramitatvāsiddheḥ. śarīre svātmapratyayasya tādṛśasyā'py apramātvopagamāt. anāditvasiddheś co 'bhayatrā' viśeṣāt.

KhKh, p. 691.

2 TCM, pp. 733-34.

observed as not only associated with smoke, but also with the difference of the hill, in which the existence of fire is sought to be proved. It is undeniable that fire has been observed in places different from the hill, the subject of the contemplated inference. The presence of fire in the hill concerned is certainly unproved and unknown, as the previous knowledge of it would render recourse to inference unnecessary. Now, the concomitance of fire with difference of hill has been observed without any break or exception. In the case under consideration, the difference of hill cannot exist in a hill, simply because the hill is only a hill and not different from it. This knowledge of the absence of the difference, which has been shown to be a necessary co-associate of fire, should make the absence of fire a necessary consequence. The absurdity shown to be inevitable in the case of the hill will be inevitable in all other cases of inference. Whatever be the subject and the predicate (*sādhya*), the fact will be true that the concomitance of the predicate has been observed in whatever is different from the subject and never in the subject. If the observation of concomitance of the predicate with the difference from the subject were the condition precedent of the said concomitance being universal and necessary, then the subject would never be the locus of the predicate, since it could not be the locus of difference from itself, which is to be taken as the determinant concomitant (*vyāpaka*) of the predicate according to the view propounded by the Mīmāṃsists[1].

But the alleged absurdity cannot arise, if reasoning be regarded as a necessary condition for the elimination of doubt, and doubt be looked upon as an obstacle to the ascertainment of necessary concomitance. In spite of the observation of the concomitance of the probandum with difference from the subject, the necessity of concomitance cannot be accepted, unless the last vestige of doubt about it be removed. But one can legitimately doubt that the element of difference is irrelevant. Why should not fire, to take a concrete example, exist in the hill, though it be different from the previously observed

1 ye ca anukūlatarkaṃ vinai va sahacārādidarśanamātreṇa vyāptigrahaṃ vadanti, teṣāṃ pakṣetaratvasya sādhyavyāpakatvagrahe anumānamātram ucchidyeta.

TCM, p. 734.

places of its occurrence? This doubt and query cannot be set at rest unless the necessity of the concomitance of the probandum and difference be placed on a footing of indubitable certitude. There is no possible means other than reasoning which can remove this doubt. The Naiyāyika therefore would not admit the necessity of such concomitance, because doubt of the possibility of its being otherwise is not ruled out by a *reductio ad absurdum*.

Moreover, the denial of reasoning as a condition of the realization of the universal concomitance would lead the Mīmāṃsist to prove more than he intends. Prabhākara seeks to prove the existence of energy as the property of a cause. But whatever probans may be adduced, the same can be assumed to prove something else in addition to the energy. One may argue that fire is the cause of combustion, because it is possessed of an energy for that. But the same probans may be shown to prove that fire is possessed of an unknown property also. Why should not fire possess some other unperceived attribute, if it can possess an unperceived attribute like energy? The Mīmāṃsist can prove his contention, only if he can adduce a *reductiò ad absurdum* of the opposite possibility. But the *reductio ad absurdum* of the opposite is what is called reasoning by the Naiyāyika. The Naiyāyika insists that mere observation of concomitance is not adequate to the proof of its necessity, unless the opposite possibility can be ruled out by a *reductio ad absurdum*. It may be hoped that the Naiyāyika has succeeded in making out a strong case for the necessity of the admission of reasoning in the ascertainment of the necessity of concomitance.

Let us conclude the dissertation on the utility of reasoning by a *résumé* of the views as given by Śaṅkara Miśra in his *Vādivinoda*. According to Śrīvallabha and Gaṅgeśa the result of the application of reasoning is the removal of doubt about the necessity of the relation between the probans and the probandum. As regards the doubt about the necessary concomitance of the ground and consequent in a reasoning, that also can be removed by another reasoning. The employment of a series of reasonings may be necessary, if a series of doubts emerge in the mind. But that is not possible and so there is no necessity of assuming contradiction by practical activity as the ultimate eliminator

of doubt. This seems to be the position of the author of the *Nyāyalīlāvatī*. But we have seen that Udayana thinks contradiction to be the ultimate solvent of doubt and its repudiation makes infinite regress inevitable. The position has been endorsed by Gaṅgeśa in his *Tattvacintāmaṇi*. There was a class of Naiyāyikas, who preceded Gaṅgeśa, who held that doubt is not possible with regard to universally accepted beliefs handed down from generation to generation from an undated past. We have seen that this position has been subjected to smashing criticism by Gaṅgeśa. There was another class of Naiyāyikas, who were of the opinion that the infinite recurrence of doubt was psychologically impossible inasmuch as the mind cannot be infinitely preoccupied with a particular mental event. The mind must move towards some other objects and thus the chance of doubt cropping up in an endless succession would be cut off. This position does not seem to be logically sound. The charge of infinite regress is in every case based upon logical possibility, which is never actualized. It is the logical necessity and the actual unreality that make the charge of infinite regress operate as an insuperable difficulty. In fact it is the element of absurdity that is sought to be brought home by the show of the logical necessity of the infinite regress. The absurdity would not be real, if the alleged infinite regress were an actual fact. Another drawback in this theory is that it misunderstands altogether the nature and purport of a logical objection. Though it is not possible as a matter of psychological truth that the doubts should go on occurring indefinitely, the psychological evidence does not give an advantage. Unless the doubt be shown to be logically absurd, the concomitance on which the inference is based will not be established. It is not the psychological cessation of doubt, but the logical impossibility of it, that alone can guarantee the truth of inference or of the knowledge of the concomitance which is its foundation[1].

A CRITIQUE OF GAṄGEŚA'S SOLUTION

We feel called upon to attempt an evaluation of the solution offered by Gaṅgeśa of the problem of infinite regress urged by Śrīharṣa.

1 V.V., p. 58.

The rôle of an exponent, that has been assumed by us, should not make it imperative that we must hold brief for any particular school; and in the interest of intellectual honesty and unbiased quest of truth, we should endeavour to convince ourselves whether a particular exposition is satisfactory or not. It will be obvious to a dispassionate enquirer of truth, who will study the exposition of the views recorded above, that the Naiyāyika has laid exclusive stress upon the logical value of empirical knowledge and practical activity. Gaṅgeśa's solution, that the contradiction constituted by activity by itself renders doubt impossible without presupposing another concomitance, does not seem to be based upon a correct appraisal of Śrīharṣa's spirit. It is hard to think that practical activity removes doubt by dint of a natural causal efficiency, just as fire removes cold. We have every reason to look upon the opposition in question as logical and not causal. The activity removes doubt, because it involves the concomitance of true belief with activity. It is assumed that if the belief were absent, the activity could not take place. But this is tantamount to the admission of a necessary concomitance between absence of activity and absence of belief, which manifests itself in the form of a doubt. Thus the contradiction afforded by activity derives its force from the belief in another wider concomitance. The latter belief is also equally open to doubt, and so the charge of infinite regress cannot be avoided. It should further be taken into consideration that our practical activities are not dependent upon a philosophical conviction of the indubitable necessity of concomitance of facts. It is not possible to doubt that belief in the presence of fire, on the evidence of smoke, is a condition of activity towards fire. But there is no necessity to suppose that this belief should be unchallengeable on philosophical grounds. In fact, the degree and kind of certitude, that is sought to be achieved by philosophical speculations, can neither be presupposed nor proved by our work-a-day beliefs and activities. Even our firmest convictions are not founded upon a profound analysis of the conditions that give them currency. So the contention of Udayana and the interpretation of Gaṅgeśa do not touch the fringe of the problem that has been raised by Śrīharṣa. The pragmatic consequences of beliefs have by themselves little or no metaphysical validity. The utmost that can be asserted in

favour of the Naiyāyikas is that they have succeeded in giving an explanation, which is valid for the practical purposes of life, the claims of which should also be duly considered so that scepticism too cannot be pushed without limit. When our doubts come in conflict with the unchallengeable and self-evident convictions, than which nothing can be surer, then certainly it is the doubts which are pushed to the wall. This has been the criticism of Raghunātha Śiromaṇi in his commentary on the *Khaṇḍanakhaṇḍakhādya*, quoted by Vaṃśīdhara Miśra in the *Tattvavibhākara*, the commentary on the *Sāṃkhyatattvakaumudī*. We could not refrain from reproducing the criticism though it gives a hard shaking to the defence of Udayana and Gaṅgeśa[1].

1 STV, p. 78.

CHAPTER IV

THE LOGICAL STATUS OF REASONING

SECTION I

We have considered the nature of the service that is rendered by reasoning and have also shown the necessity of reasoning as an instrument for the elimination of doubt. We now propose to consider the claims of reasoning as an organ of knowledge. The tradition is unbroken among the Naiyāyikas that reasoning is not an instrument of knowledge, though it is a necessary *modus operandi* of the same. In the course of our work we will show that the Mādhvas, the Rāmānujīyas, and the Jainas have accorded to reasoning the status of a cognitive instrument. Vātsyāyana, Uddyotakara, and Vācaspati regard reasoning rather as a helpful condition and an auxiliary to an independent instrument[1]. Udayana seeks to establish the subordinate character and rôle of reasoning from a different line of approach. He asserts that reasoning is not knowledge, but an assumption and an imaginary imposition (*āhāryāropa*). The assumption of an untrue ground is meant to make the assumption of an untrue consequent unavoidable[2]. But the question arises, why should the ground and the consequent and the relation between them be untrue? Taken by themselves each one of these factors of the judgment in question is true. Thus for instance, smoke is a concomitant of fire and their relation is also necessarily true. If the relation in question were not true, the reasoning would be only a counterfeit show. It is admitted even by those who do not acknowledge the objective truth of the judgment set forth by reasoning that there are a true reasoning and a false simulation of reasoning (*tarkābhāsa*). It stands to reason to conclude that reasoning should not be regarded as an assumption (*āropa*)[3].

1 tarko na pramāṇasaṃgṛhito, na pramāṇāntaraṃ pramāṇānām anugrāhakas tattvajñānāya kalpate. NB, p. 53; *vide* also NV, p. 53; NVTT, pp. 53-54.

2 NVTTP, p. 325.

3 nanu nāyam āropaḥ, āpādyāpādakasvarūpe tasya tātvikatvāt, nā'pi tayoḥ saṃsarge, tasyā'py abādhanāt.........na tarkasya āhāryāroparūpatvam.

NVTTPP, pp. 325-26.

It is answered by the Naiyāyika that though the ground and the consequent are real by themselves and the relation between them is also necessarily true, still there is no real relation between the ground and consequent on the one hand and the locus on the other in which they are sought to be affirmed. The form of such assertion is therefore necessarily hypothetical, which implies that the assertion is only an attempt at affirmation and not a statement of categorical truth. In a hypothetical judgment it is not the truth, of the ground or of the consequent or of the relation between them, that is the matter of assumption; but the affirmation of the unreal relation of the ground and consequently of the consequent with a subject is sought to be effected by means of the same. In fact, the ground does not belong to the subject and consequently the consequent cannot exist in it. Thus, a hypothetical judgment is not a real judgment at all, since it does not correspond to a true and actual objective situation. It is the unreality of the relation of the ground with the subject that makes the judgment unreal and false. A false judgment, asserted in full consciousness of its falsity, can be characterised as only a deliberate and voluntary imposition and so the Naiyāyika calls it an assumption. An example will drive home the truth of the proposition. Let us consider the following hypothetical judgment, which is an illustration of what is called reasoning (*tarka*). "If the lake were possessed of smoke, it would be possessed of fire". It is a fact that the subject, namely the lake, does not possess smoke or fire. But still the formal hypothetical assertion makes us understand as if a relation were actually present between the lake and the smoke. An assumption is the understanding of a relation, which does not actually exist. Thus, smoke and fire both are only ascribed to the lake, though they do not belong to it. The hypothetical assumption thus differs in a material respect from inference. In inference the probans and the probandum must exist in the subject. The lack of the former condition makes the probans non-existent in the subject (*svarūpāsiddha-hetu*) and thus makes the minor premise impossible. The non-existence of the probandum in the subject constitutes the fallacy of contradicted reason (*bādha*). But these very conditions are essential to a hypothetical judgment of the

nature of assumption (*āropa*). The assumption of a false probans makes the admission of a false probandum inescapable. It is useful as a *reductio ad absurdum*, and the unreality of the probans and the probandum is the very condition of the *reductio ad absurdum* becoming effective[1].

The problem, which we have set out to determine, is the logical status of reasoning. In the course of our enquiry we have found that reasoning gives assumption and not knowledge. It seems necessary that we should determine the epistemological nature of assumption, as that will make the determination of its logical status an easy natural procedure. Uddyotakara has observed that the nature of reasoning is difficult to determine. The difficulty is apparent from the fact that there is such wide divergence of opinion regarding the nature of reasoning. The Naiyāyikas regard it as a separate category. The author of the *Vaiśeṣikasūtra* as well as Praśastapāda do not admit the reality of such a category. The Mīmāṃsists and the Buddhists have sought to include it within the fold of inference. The Jainas regard it as an independent instrument of knowledge. The difference of opinion among philosophers is proof of the intractability of the problem. Certainly, it is difficult to ascertain whether there can be a species of cognition, which is neither doubt nor certitude. The difficulty is further accentuated by the consideration that the existence of a cognition is known by introspection in the form 'I know'. Similarly, desire and aversion are known by introspection as 'I desire' and 'I dislike it'. But in the case of assumption, the verdict of introspection is not so definite and that is the cause of its difficulty and consequently of the difference of the views among philosophers. A class of philosophers, though they regard it as different from doubt and certitude, still think it to be a species of cognition. But a question arises whether assumption, which is the natural form in which reasoning manifests itself, is felt by introspection in the form, 'I know'. To cite one or two instances, reasoning gives itself out as follows. 'If the hill were devoid of fire, it would

1 mai vaṃ. tarko hi nirvahnir ayam nirdhūma iti nirvahnitvādinā sahe 'dantvasya sāmānādhikaraṇyaṃ ullikhati. etan-mūlakam abhidhānam api tatsāmānādhikaraṇyaviṣayaṃ, na ca tad asti vāstavam. NVTTPP, p. 326.

be devoid of smoke'. 'If the lake were possessed of smoke, it would be possessed of fire'. But is it definite that the character of the hypothetical judgment is felt as 'I know the absence of smoke in the hill or the presence of fire in the lake'? Certainly the cognitive character is not at all definite, as in that case there would be no reason for divergence of views. Some neo-logicians expound the introspection as 'I assume (*tarkayāmi*) absence of smoke or presence of fire'. But this seems to be an attempt to avoid the real problem. Is assumption felt as a species of cognition?

There is no doubt that when a man sees a jar, he feels by introspection that he sees it and also knows it as jar. It never happens that the man thinks that though he perceives the jar, he does not know it. So with regard to inference. A person, who infers the presence of fire in a hill, is made sure by introspection that he not only infers fire, but also knows it. Perception and inference are thus seen to be necessary concomitants of cognition. But is assumption known to be so? The case seems to be quite otherwise. A person actually sees smoke and then reasons that, 'if the hill be devoid of fire, it must be devoid of smoke'. But is this reasoning competent to give knowledge of absence of smoke in the hill? It seems preposterous to suppose that the same person, who sees smoke, would be made to posit his knowledge of the absence of smoke; but this is the result, in which the reasoning is shown to culminate. Call it assumption or anything you like, but it is difficult to regard it as a species of cognition.

There is another consideration, which makes it next to impossible to classify it under cognition. Reasoning is called a hypothetical judgment, but the adjective 'hypothetical' covers a multitude of difference from a judgment proper. It is a truism that a judgment is cognisant of a relation between two terms, adjective and substantive, subject and predicate. If there be no knowledge of a relation, or if there be the knowledge that relation does not exist, no judgment will be possible. The definite knowledge, that a relation does not exist, is called by the Naiyāyikas knowledge of contradiction, which is regarded by them as an impediment to the realization of judgment. But the very reverse is seen to be the case with a hypothetical

judgment in which reasoning manifests itself. The knowledge of contradiction is rather the essential condition of a hypothetical judgment. So what is an impediment to judgment in general is the very condition of reasoning, hypothetical judgment and assumption, which mean one and the same thing. Now, the predicate e.g. the absence of smoke, the assumption of which is necessitated by reasoning, is known to be absent in the hill. Thus, the definite knowledge of the absence of the predicate in the subject is the essential condition of assumption. It would not be an assumption, if the posited predicate were not known to be contrary to what is true. The upshot is that the condition of hypothetical judgment is the very reverse of what makes judgment possible. Viewed from the point of view of the conditions of their genesis, the hypothetical judgment is thus diametrically opposed to judgment proper. It is difficult to suppose that though produced by the exact opposites, the effects should come to have a common character. The community or divergence of nature of effects is determined by the corresponding character of the conditions. Linen is not a jar, because they are possessed of contradictorily opposed character. To the question why they should have such opposite character, the answer will be found in the difference of the causal conditions of the effects. Reasoning or hypothetical judgment has been shown to be derived from causal conditions, which are the diametrical opposites of the conditions of categorical judgments. As we have indicated before, the designation of hypothetical judgment as judgment is only an extension of linguistic usage on the ground of formal analogy and has no material validity and justification. "The internal structure of an assumption is the same as that of a judgment. The only difference is that a judgment is an assertion, while an assumption is not... And it is true of an assumption, as it is of a judgment, that it has meaning".[1] Barring this similarity, the two have no community so far as its logical value is considered.

There is another fundamental difference, which puts hypothetical judgments in a class apart from categorical judgments. A judgment,

1 *The Nature of Existence,* vol. ii, p. 106.

which refers to a desirable objective or to a means of its realization, produces a conation[1] for the same. Thus conation is always the consequence of a judgment and not *vice versa*. But a hypothetical judgment or an assumption, which are the same thing, cannot produce a conation about its object. On the contrary it is itself the result of a conation. An assumption is the consequence of a conation of the form "Let there be a cognition of an attribute in a subject, which we know to be devoid of the same". In fact assumption is an attempted judgment for which none of the necessary conditions is in existence. It is difficult therefore to suppose that assumption should be a species of cognition.

There is another characteristic, which distinguishes assumption from knowledge or judgment. A judgment is either invalidated by an opposite knowledge or it itself invalidates the latter. But assumption can neither invalidate, nor can be invalidated by any judgment, inasmuch as the knowledge of its invalidity and falsity is its very condition. Assumption makes an attempt to think of an attribute as existent in a substratum, in which it is known to be non-existent. If the knowledge of contradiction were to invalidate an assumption, it would not come into being at all, since the very condition of its origination is the knowledge of the aforesaid contradiction.

It follows from the consideration of the nature of assumption, of its object, and of its conditions, that assumption or hypothetical judgment cannot be placed under the same category with knowledge. The Naiyāyikas were cognisant of this fundamental difference of character and so they have called it hypothetical knowledge or assumption. The difference of terminology only serves to stress its difference as a psychical activity. It is refreshing to note that McTaggart also recognises assumption as a psychical activity, which is placed by him in a different category from other psychical activities. He of course places assumption together with judgments and volitions under cogitation, which is wide enough to include what is an accredited cognition and what is not so.

1 'Conation' is used here to mean desire for the attainment of an object together with a volitional activity.

A class of Naiyāyikas has regarded assumption as a species of mental perception. But this seems to be unjustifiable. A perception, mental or sensuous, is the generator of a latent mental trace, which produces recollection. But assumption cannot be supposed to generate either a mental trace or a memory, and thus it is misleading to call it a case of perceptual cognition. Some modern Naiyāyikas have sought to deny that reasoning as hypothetical judgment or assumption is the product of a conation. But this seems to be due to a confusion. It would not be an assumption, if it were not the effect of a conation. There are some other Naiyāyikas who have made an attempt to subsume assumption under erroneous knowledge. But this seems to be also an inaccurate appraisal of the nature of assumption. If assumption were a kind of error, it must be shown, in the first place, to be produced by some defect ; and, in the second place, it must be shown liable to be contradicted by a subsequent judgment. But it is neither the effect of a defect nor is it liable to be contradicted. In the circumstances, the assertion that assumption, though not superseded by a subsequent experience, is an error, is tantamount to admission of an error, which does not admit of contradiction. But this is obviously a case of contradiction in terms. If the Naiyāyika seeks to justify his classification of assumption under error on the ground of its recognised difference from truth, then there would be no excuse for not placing assumption under the category of true knowledge. Assumption is found to share these two fundamental characteristics of true knowledge, namely, that it is not the effect of a defect in any condition of knowledge, and secondly, it is not contradicted by a subsequent experience. We are constrained to observe that Udayana in his work *Kiraṇāvalī* has also sought to place it under the head of erroneous knowledge[1] out of loyalty to Praśastapāda, who does not admit a third variety of knowledge apart from error and truth. But our criticism will also apply to Udayana. To sum up, assumption has none of the characteristics of knowledge proper. It does not produce memory or any volitional activity, which are invariably the consequences of knowledge. This shows that assumption cannot claim to have the logical character

1 viparyayabhedatvāt pṛthaṅ no 'padiṣṭaḥ.
KV, p. 260.

of truth or falsity, as it lacks the fundamental psychical characteristics of knowledge, which alone can be true or false.

Assumption again is to be distinguished from error. Error is also the attribution of a false predicate to a subject and in assumption also there is the same false attribution. But whereas in error the erring man is not conscious of the falsity, in assumption we are aware that the attribute, which is ascribed to the subject, does not actually belong to it. In Sanskrit terminology both these cases are called cases of ascription (*āropa*). But error is an ascription, which is not conscious of itself and assumption is on the contrary conscious of the falsity of the ascription (*āhāryāropa*). For the sake of brevity and simplicity we propose to call error an unconscious ascription and assumption a conscious ascription. We shall use the term assumption as equivalent to conscious ascription henceforward.

We have found that both error and assumption are cases of ascription. Ascription can again be divided into (1), ascription of identity and (2), ascription of relation. The ascription of identity makes the substratum and object of ascription appear as identical. The ascription of relation serves to make them understood as related. If the numerical difference or the unrelatedness of the terms is not felt owing to some defect, the ascription of identity or of relation will be a case of error. But if the knowledge of numerical difference and of the lack of relation be present in the mind and still identity or relation be superimposed by a fiat of will it would be a case of assumption. In poetical figures, particularly metaphor (*rūpaka*), one thing is felt to be identical with another. This conscious identification of different objects, (for example, when the face of a lovely woman is imagined to be identical with the moon or lotus), is a case of assumption of identity[1]. The poet's imaging of the face as the moon is inspired by their close similarity. But whatever may be the psychological reason for the attempted assertion of identity or of relation in assumption, the fact is indubitable that the attempted identification or relation takes

1 *Sāhityadarpaṇa*, pp. 440-41.

place in full consciousness of their unreality. Thus the hypothetical assertion, viz. "If the lake were possessed of smoke, it would be possessed of fire," is an instance of assumption or an imaging, as called by McTaggart[1]. In McTaggart's terminology the psychical process involved is called imaging.

The separate existence of imaging or conscious ascription as psychical reality cannot be denied or ignored. It is Udayana who seems to have drawn our attention to the reality of this psychical existent. In fact, the reality of this psychical process was implicitly recognised even in Vedic times. The processes of meditation recommended in the Upaniṣads and the later Paurāṇic literature are cases of conscious ascription. Thus it is recommended that one should meditate the mind as the Absolute Brahman or a male person as fire or a woman as mother[2]. The fact that the object of meditation is not what it is recommended to be meditated is perceived throughout the duration of the religious exercise. This also explains the etiology of the worship of images as Gods and Goddesses. The identification is always deliberate, whether inspired by similarity or otherwise.

Reasoning has been shown to be possessed of the character of assumption. But reasoning is a hypothetical judgment and as such consists of two members. The first member is the assumption of the ground (*vyāpyāhāryāropa*) and the second is the assumption of the consequent (*vyāpakāhāryāropa*). The first is the condition and the second is the consequence. Now, assumption (*āhāryajñāna*) is defined by the neo-logicians as "Judgment having for its predicate an attribute the opposite of which is known to be a real determination of the subject[3]". Assumption as defined here cannot be confounded with authentic knowledge, the characteristic of which is the actual presence of the predicated attribute in the subject. Thus, for instance, the judgments, "The hill is possessed of smoke", or "The lake abounds in weeds and fish", are instances of authentic knowledge. The reason

1 *The Nature of Existence,* vol. ii, p. 106.

2 mano brahme'ty upāsīta. Chānd. Up. III. 18.
puruṣo vāva gautamāgniḥ. *Ibid.*, V. 7.

3 svaviruddhadharmadharmitāvacchedakakaṃ svaprakārakaṃ jñānam āhāryam.

of the authenticity lies in the fact that smoke, which is predicated of the hill, is actually present in it and the weeds and fish predicated of the lake actually exist in the subject. Error is also a judgment, but the predicate does not in point of reality belong to the subject. The main point of its difference from assumption consists in the fact that though in error the predicate does not belong to the subject as a matter of ontological fact, yet it is not realized that the subject does not actually possess the predicate, but on the contrary has an attribute, which is the contradictory of what is predicated. In fact, the knowledge of the absence of the predicate and of the presence of its opposite in the subject would make an error an impossibility. In assumption, however, the person who makes this assumption is quite alive to the unreality of the predicate as an attribute of the subject and is fully conscious that the subject on the contrary possesses an attribute, which is contradictorily opposed to the predicate. In one word, assumption is a false knowledge known to be false. This knowledge of falsity of the attribute, which is predicated notwithstanding the consciousness of its falsity marks it out from error, which is false knowledge honestly believed to be true. It is for this reason we have taken exception to the attempt of a later section of Naiyāyikas to include it under error.

Reasoning is a complex judgment or rather a compound of assumptions. In it one assumption makes another assumption an irresistible logical consequence. Thus, for example, when an arguer seeks to rebut the denial of fire by an opponent in a place, which is known to possess smoke, he pretends to accept the opponent's assertion of the non-existence of fire as a truth. But he makes the assertion of the opponent the ground for enforced admission of the non-existence of smoke, which flatly contradicts the accepted datum of experience. The argument is put in the form, "If the hill did not possess fire as you maintain, it must not possess smoke". That absence of fire necessarily involves absence of smoke is not liable to doubt even by the opponent. So the demonstration of the necessity of denial of smoke amounts to the demonstration of an absurdity, which is bound to be admitted as a necessary consequence of the denial of fire. The particle 'if', which is prefixed to the preliminary

assertion, indicates that the assertor of the hypothetical proposition does not believe in its truth. Both the clauses, the ground and the consequent, are known to be false and are also proved in the end to be absurd.

This rather elaborate consideration of the nature of the hypothetical judgment, in which reasoning invariably delivers itself, will make the determination of the logical problem an easy procedure. The foregoing discussion has resulted in showing that reasoning is not knowledge, but a compound of assumptions. So the logical problem as to whether reasoning should be regarded as an organ of valid knowledge should not arise. But philosophers are not prepared to let down the matter on such rather easy terms. It has been urged that, whatever be the psychological character of reasoning, its contribution to the determination of truth by means of the elimination of doubt about the opposite possibility is undeniable. The intention of the opponent seems to be that reasoning, though it may not be itself a species of valid knowledge, may be an instrument of valid knowledge. The opponent is also not prepared to accept the position that Akṣapāda is definite that reasoning is not a cognitive instrument. The mere omission of inclusion of reasoning in the list of the instruments of knowledge does not prove that reasoning cannot be an additional instrument of knowledge. The *argumentum ex silencio* has no force even from the standpoint of the author of the *Nyāya-sūtra*, who does not care to be exhaustive in his statement. Thus, for instance, Akṣapāda does not include doubt and the like in the list of twelve knowables formulated by him. But that does not prevent the recognition of doubt etc. as additional knowables. So it must be regarded as an open question that though reasoning may have been omitted from the list of cognitive instruments, it may be regarded as an additional instrument of knowledge[1].

But this contention of the opponent cannot be accepted as the authentic representation of the intention of the author of the

1 astu tarhi pramāṇapadasaṃgṛhītebhyaḥ pramāṇebhyaḥ pramāṇāntaram asaṃgṛhītaṃ pramāṇapadena, prameyapaden 'evāsaṃgṛhītāḥ saṃśayādayaḥ prameyāḥ. NVTT, p. 53.

Nyāyasūtra. We shall produce reasons to show that the position maintained by the opponent is incorrect, both psychologically and logically. But even from the point of view of historical and traditional interpretation the position will be found to be indefensible. It is a fact that Vātsyāyana has definitely asserted that reasoning is not included under any one of the four recognised cognitive instruments nor it is an additional organ of knowledge[1]. Uddyotakara observes that the reason for rejecting the claim of reasoning to be a valid instrument of knowledge lies in the fact that reasoning does not produce certitude of belief in an object of knowledge[2]. Udayana explicates the meaning of Uddyotakara's statement by pointing out that reasoning cannot independently and directly produce certitude. It is in fact dependent upon the service of a recognised cognitive instrument and thus has not independent efficacy as productive of knowledge. A cognitive instrument is what is a direct condition of certain knowledge by dint of its own causal efficiency. But reasoning does not and cannot produce certitude independently of an organ of knowledge and so it is not regarded as an independent cognitive instrument. It is always subordinate and subservient to an independent cognitive instrument and so can never appropriate the status of the latter[3].

Udayana observes that if reasoning were to be an independent instrument and were to be accepted as such, it should be shown to produce valid knowledge in either of these two ways. A cognitive instrument may be either a valid cognition by itself, or something different from cognition. Thus, the instrument of inference is a valid knowledge of necessary concomitance. But the instrument of perceptual knowledge is a sense-organ, which is a material entity and so non-psychical. The difference between the two kinds of cognitive instruments is that the first type produces its effect only when it is known; the other type is competent to produce knowledge by remaining un-

1 tarko na pramāṇasaṃgṛhīto na pramāṇāntaram.
NB, p. 53.

2 pramāṇaṃ paricchedakaṃ na tarkaḥ. tasmān na pramāṇam.
NV, p. 53.

3 NVTTP, p. 324.

known. About the first type it should be recognised that it can be an instrument of knowledge, if it is itself a valid cognition. Now, reasoning being a psychical reality cannot operate like sense-organ as unknown and unperceived. If it is to be a cognitive instrument it must produce credentials of its being itself a valid cognition. But we have seen that reasoning is only an assumption and not a cognition at all. And so the question of its being a valid cognition does not arise. But a cognitive instrument is necessarily found to be either an unperceived sense-organ or a valid cognition. As reasoning is neither the one nor the other it cannot be regarded as an independent instrument of knowledge[1].

Again, reasoning can be an instrument of valid cognition, only if it can be shown that there is a valid cognition, which is its result. In inference the resultant knowledge is the conclusion. Let it be supposed that reasoning as a cognitive instrument has this conclusion as its effect. But reasoning has been found to be the assumption of a consequent necessitated by the assumption of a ground. If reasoning as the assumption of the consequent is to be the organ of inference, it must be shown that the object of the said assumption stands in a definite and necessary relation with the object of inference. Thus, for instance, knowledge of smoke produces knowledge of fire, because smoke is known to be necessarily related to fire. But the object of assumption is not seen to stand in a necessary relation to an object of inference. The reasoning is of the form, "If it were devoid of fire, it would be devoid of smoke". Here the assumption of the negation of smoke has for its object the said negation of smoke, which has no direct relation with fire as the object of inference. It can at most be said that the negation of smoke is only concomitant with the negation of fire and the object of inference is only the opposite of the said negation, namely, fire. But this relation of the object of inference with the opposite of the object of assumption is not a necessary and essential relation. Thus, assumption cannot be supposed to lead to

1 etad uktaṃ bhavati—tarko hi pramārūpaṃ pramāṇaṃ syāt liṅgadarśanavat, apramārūpaṃ vā indriyādivat. na tāvad ādyaḥ. tasya āhāryāroparūpatvāt. nā 'pi dvitīyaḥ............ NVTTP, p. 326.

the knowledge of the object of inference. There is a necessary relation, no doubt, between the negation of negation of smoke, that is to say, between smoke, and fire, which is the object of inference. The knowledge of smoke is the necessary cause of the knowledge of fire, since smoke has a necessary relation with fire. The advocate of the validity of reasoning can at most assert that the object of inference is necessarily related with the negation of the object of reasoning. But this is not equivalent to the proof that the object of reasoning has a necessary relation with the object of inference. Thus reasoning cannot be regarded as an instrument of the inferential knowledge. It can at most be regarded as a contributory to the inferential knowledge and this has been done by the Naiyāyika, who accepts reasoning as an auxiliary to a cognitive instrument[1].

Furthermore, the advocate of the independent validity of reasoning cannot point to any independent valid cognition as its result. If it is intended that reasoning is the instrument of the cognition, which is produced by a sense-organ or an instrument of inference, then it must be admitted that reasoning can produce such cognition only when it is associated with those accredited instruments. But this amounts to a confession that reasoning only serves as an auxiliary to those instruments. The Naiyāyika also admits that reasoning has a bearing upon a valid cognition that is produced by an instrument of knowledge, and this bearing is due to the fact that reasoning is only a function of an instrument of knowledge and has no independent status of its own[2].

It is true that reasoning is the assumption of the consequent necessitated by the assumption of the ground. In other words, reasoning is a *reductio ad absurdum*. Though it is essentially an assumption, it

1 ......svaviṣayavyāpyaviparyaye hy asya prāmāṇyam āśaṅkitaṃ, tena ca nā 'sya niyāmakaḥ sambandhaḥ, asambaddhasya gamakatve 'tiprasaṅgaḥ, tadviṣayaviparyayasya tu tena saha svābhāvikaḥ sambandho' sti. tena tatsaṃvalitasya pravṛttes taditikartavyatātvam eva. NVTTP, p. 327.

2 We have already shown that function is the product of a cause, which is the necessary condition of the production of the effect for which the cause is responsible. In other words, function is the operation (*vyāpāra*) of the cause by means of which the cause produces the effect . Thus function is the intermediate stage between the cause and effect, being related to the cause as its effect and to the effect as its cause. (*kāraṇajanyaḥ kāraṇajanyajanako vyāpāraḥ*).

serves to demonstrate the falsity of the opposite conclusion and thus by the implication of opposition, becomes an instrument of proving the truth of a given argument. An example will make the position clear. Suppose, one seeks to prove the existence of fire on the ground of the existence of smoke. Suppose, again, that an opponent questions the validity of the inference of fire. The opposition is rebutted by the assertion that if there were no fire, there would be no smoke. The negation of smoke is however unreal and the unreality of the negation of smoke proves the unreality of the negation of fire. The proof of the unreality of the negation of fire is tantamount to the proof of the reality of fire. Thus, though an assumption, reasoning really culminates in the proof of the probandum. The plausibility of the opponent's argument is undeniable, but it will not stand scrutiny. It is true that reasoning shows that the denial of fire necessitates the denial of smoke; and the denial of smoke is contradicted by the unmistakable perception of smoke. The result is that reasoning with the aid of perceptual knowledge serves to establish the proposition that the subject is possessed of the negation of negation of smoke, which is the equivalent of smoke. If smoke or negation of negation of smoke be the ground of the proof of the negation of negation of fire, it becomes only a case of inference of fire by means of smoke. The only point of difference is that in the positive inference, fire is proved by smoke and in the negative inference the negation of negation of fire is proved by the negation of negation of smoke. The difference is only formal. The truth of the matter is that reasoning can be regarded as an independent organ of knowledge only when it surrenders itself and gives rise to an inference. It is for this reason asserted by the Naiyāyika that reasoning cannot have the status of an independent instrument of knowledge. There is absolutely no room for doubt that reasoning is a necessary step, but its necessity and utility lie in the removal of an impediment, which facilitates the functioning of an independent organ of knowledge, held so long in abeyance owing to the presence of an obstacle[1].

There is another consideration, which detracts from the claim of reasoning to be an independent cognitive instrument. Though it is a

1 NVTTP, p. 327; *vide* also NVTTPP, p. 327.

useful auxiliary to a cognitive instrument, it is not a universal and necessary factor even in its subordinate rôle. In perceptual cognition reasoning has no part to play. Thus its scope as an auxiliary is only limited. It would not, however, be a sound objection if it is argued that when reasoning is not a necessary condition of knowledge even as an auxiliary, it should be totally dispensed with. Because the lack of its universal necessity does not prove that it is not necessary in any case. In fact reasoning is called into requisition where there is doubt of the opposite possibility. And this doubt prevents the successful operation of a cognitive instrument. Reasoning thus renders a useful and necessary service by eliminating the doubt, which held the cognitive instrument in question in suspension. It might be urged against this claim of reasoning that though it be a necessary instrument for the elimination of doubt, reasoning cannot be regarded even as an auxiliary to a cognitive instrument. So far as the knowledge of an object is concerned it can be achieved only by an accredited cognitive instrument, and reasoning has no direct or indirect contribution to the realization of such knowledge. It has been shown that there are cases of knowledge which are not preceded by reasoning. Thus, however necessary be the services of reasoning, its bearing upon the knowledge of an object achieved by means of a cognitive instrument is found to be nil. It has been claimed by some Naiyāyikas that reasoning is a function of a cognitive instrument and we have already explained this position. But it is now contended that reasoning cannot even have the status of such a function. The fact, that there are cases of knowledge unpreceded by the service of reasoning and the further consideration, that reasoning has no bearing upon the achievement of knowledge, prove to demonstration that the claim of reasoning being a necessary function of a cognitive instrument is unfounded and indefensible[1].

The contention of the opponent serves to show that reasoning has no necessary connexion with a cognitive instrument or the resultant knowledge produced by it. But the contention cannot be accepted as a true evaluation of the character of the service of reason-

1 NVTTPP, p. 328.

ing. It is not denied that there are cases of knowledge, which are independent of the service of reasoning. But there are also cases of knowledge, which are produced by cognitive instruments only when they are aided by reasoning. The qualitative difference of the resultant cognitions is proof of the efficacy and bearing of reasoning upon the former. The knowledge that is secured by a cognitive instrument independently of reasoning is only assertory in character, whereas the cognition produced by a cognitive instrument reinforced by reasoning is definitive and apodeictic in nature[1]. Thus it is universally true that definitive knowledge has always reasoning for its antecedent condition. Though reasoning cannot be an independent instrument of knowledge, its necessity and utility cannot be denied. The only explanation of this is that reasoning by elimination of doubt serves to put the resultant knowledge on a footing of definitive certitude and it can achieve this if it can serve as the necessary function of an instrument[2].

Our exposition of the Naiyāyika's speculations on the logical status of reasoning will remain incomplete if we do not advert to a point of striking importance, which we had occasion to mention in connexion with our exposition of Uddyotakara's standpoint. It has been observed that reasoning serves to create a presumption in favour of one of the competing alternatives by setting forth the logical grounds on its behalf. But the presumption or a sense of heightened probability should not be construed as a kind of belief falling short of the rank of the certitude. Udayana interprets the concept of probability here as equivalent to the proof of non-contradiction[3]. Presumption is at most an attenuated form of doubt in which the degree of probability in favour of one of the alternatives is enormously greater than in the other. But this cannot be the full nature of the service rendered by reasoning. So long as the other alternative is not ruled out as an impossibility, the truth of a particular position cannot be accepted as established. Udayana

1 NVTTPP, p. 328.

2 *Ibid.*

3 saṃbhāvanā ce' hā'virodhamātram.

NVTTP, p. 329.

therefore interprets this concept of probability as nothing short of the demonstration that the given position is not contradicted by the testimony of any accredited organ of knowledge. This explanation of Udayana again furnishes the explanation of the assertion, which is frequently made by the Naiyāyikas, that reasoning lends support to a cognitive instrument at work. Udayana further observes that this is also in agreement with the view of Vācaspati Miśra who asserts that reasoning consists in the demonstration of logical tenability or untenability of the competing alternatives.

Vācaspati states that reasoning lends support to a cognitive instrument by setting the seal of approval upon its finding[1]. Udayana observes that this process of approval consists in the demonstration that a particular proposition is not in opposition to the deliverances of accredited sources of knowledge[2]. Let us explain the position by means of a concrete illustration. The inference of fire on the ground of smoke is said to be approved and supported by reasoning. The approval and support consist in showing that the absence of fire is incompatible with the presence of smoke and so by opposition the presence of fire is true. The existence of fire is in concord with the evidence of all the sources of knowledge that are relevant to it. And the concord and harmony of fire with smoke is deduced from the absurdity of the opposite possibility. Reasoning *qua reductio ad absurdum* shows that the absence of fire is incompatible with the presence of smoke. This is the interpretation of Vardhamāna and we think that Vardhamāna is more correct and precise in his statement than even Udayana and Uddyotakara[3]. Uddyotakara characterized the service rendered by reasoning as the creation of presumption[4]. This was interpreted by Vācaspati as the demonstration of logical validity and invalidity of the competing alternatives. Udayana clarified the conception further by showing it to be the demonstration of absence of conflict and opposition with established truths. Vardhamāna has taken pains to clarify this demonstration

1 tarkaś ca..............pramāṇaṃ yukte tattve pravartamānam anujānan pramāṇam anugṛhṇāti. NVTT, p. 54.

2 NVTTP, p. 329. 3 *Ibid.* 4 NV, p. 326.

of non-contradiction by showing that it is only an indirect result achieved by proving the absurdity of the contradictory possibility. To round off the discourse we may observe that the proof of the existence of fire is afforded by inference alone, and reasoning only supports the deliverance of inference by showing that the non-existence of fire is logically incongruent with the presence of smoke.

Section II

THE LOGICAL STATUS OF REASONING AS ELUCIDATED IN THE *NYĀYAKANDALĪ* AND IN THE *VYOMAVATĪ*

It is necessary in order to make our treatment of reasoning complete and thorough that we should take into account the exposition of reasoning as found in the *Nyāyakandalī* and in the *Vyomavatī*. Śrīdhara in the *Nyāyakandalī* alludes to the Naiyāyika according to whom reasoning has been supposed to be a species of knowledge, which cannot be subsumed either under doubt or certitude[1]. It has been thought to be of the nature of presumption which however serves to eliminate the doubt of the opposite alternative and thus paves the way for the effective application of an organ of knowledge. Thus, for instance, when one philosopher asserts that the self is subject to birth and death and another asserts that it is unborn and immortal, these two conflicting assertions necessarily give rise to doubt. Now the consideration—that if the soul were subject to birth and death, then rebirth and emancipation would be impossible, and if it were, on the other hand, an eternal principle, then its association with the successive physical organisms called *saṃsāra*, and its ultimate emancipation from this cycle of birth and death, which are the inevitable fate of physical organisms, would be possible—creates a presumption in favour of the immortality of the soul, which is however proved by inference. Reasoning thus helps the determination of truth by inference by means of removing an obstacle caused by doubt. It can thus be regarded rather as a function of inference. It cannot however be considered as an

1 anubhūyate hy antarā saṃśayaṃ nirṇayaṃ ca tarkaḥ.
NK, p. 103.

organ of knowledge by itself, inasmuch as the probans employed in reasoning is hypothetically assumed and as such the minor premise is a false assumption[1].

This is only a succinct representation of the position of the older Naiyāyikas by Śrīdhara and we have elaborately dealt with this theory before. What is of importance in this connexion is that Śrīdhara does not think this to be a sound view. He asks what is the nature of reasoning ? Is it knowledge of the impossibility of the opposite alternative endorsed by the opponent ? Or, is it a presumption in favour of one's own position[2] ? On the first alternative reasoning must be held to be an organ of knowledge. If the knowledge—that the cycle of births and rebirths and final emancipation from this course of events would be impossible if the soul were a historical event—were invalid, the opposite alternative advocated by the opponent would not be ruled out as an impossibility. And consequently the proof of the immortality of the soul by inference would not be possible[3]. If, however, it is held that the opponent's position is validly rebutted by reasoning, and the denial of the course of rebirth and death and of the eventual emancipation from this undesirable course of events, which is the inevitable consequence of the opponent's position, is an absurdity, then reasoning must be regarded as the instrument which establishes a valid conclusion. If such be the case, it must be subsumed under a recognised organ of knowledge, be it perception or inference[4]. In point of fact, reasoning operates as a *reductio ad absurdum* and it succeeds in proving the absurdity of the opponent's position by adducing a stronger reason in support of the contrary position. It is thus an instrument for proving the impossibility of the position advocated by the opponent and as such has all the characteristics of inference.

1 NK, p. 103.

2 kiṃ parapakṣābhāvapratītis tarkaḥ? kiṃ vā svapakṣasaṃbhāvanā? *Ibid.*

3 ādye pakṣe pramāṇam eve 'dam. jñātur anityatve saṃsārāpavargayor asambhava iti jñānaṃ yady apramāṇaṃ nā 'smād vipakṣābhāvasiddhiḥ, apramāṇena kasyacid arthasya siddher ayogād ity anumānasyā 'pravṛttir eva viṣayavivekābhāvāt. *Ibid.*

4 atha siddhyaty asmād vipakṣābhāvas tadā pramāṇam idam pratyakṣādiṣu kasmiṃścid antarbhaviṣyati. *Ibid.*

It has been contended that reasoning does not record a definitive verdict, but only operates as a presumption in favour of a particular position. But the question may legitimately be posed, what makes this presumption possible? In other words, what is the cause of it[1]? Is it the organ supposed to establish the conclusion in view? No, that is not possible. If an organ has established the conclusion, then there will be no necessity for presumption at all and so reasoning would be entirely superfluous[2]. As a matter of fact the argument employed to establish the immortality of the soul would never succeed in establishing the conclusion, unless the position, advocated by the opponent, namely, that the soul is subject to birth and death, is proved to be a logical impossibility. If, however, it is supposed that reasoning serves to prove the absurdity of the opponent's position and inference thereafter succeeds in proving the immortality of the soul, then it must be held that reasoning furnishes the logical ground, which makes the inference of immortality, a logical possibility. Reasoning shows that the soul cannot be mortal and the assertion of the impossibility of mortality is tantamount to the assertion of the immortality of the soul. It is thus nothing but inference[3]. Even if it be regarded that the knowledge of the immortality of the soul follows as a consequence directly from the probans employed by the arguer, viz. 'that the soul is not subject to birth and death', still the conclusion will not follow so long as the contention of the opponent that the soul is subject to birth is not demolished. The demolition of the opponent's position is however secured by reasoning acting as a *reductio ad absurdum*. Reasoning proves that the soul cannot be mortal, as it involves the absurd consequence of the impossibility of emancipation from this cycle of births and deaths. And even if this proof of the absurdity of the assertion of mortality be not regarded as tantamount to the

1 atha svapakṣasambhāvanātmakaḥ pratyayas tarkaḥ, asyo 'tpattau kiṃ kāraṇam?

NK, p. 104.

2 na tāvat svapakṣasādhakaṃ pramāṇaṃ, tasyā' pravṛtteḥ.

Ibid.

3 vipakṣābhāve pratīte svapakṣasambhāvano' pajāyate iti vipakṣābhāvapratītir asya kāraṇam iti cet? tarhi vipakṣābhāvaliṅgakam anumānam evai tat.

Ibid.

proof of its immortality, but rather as a logical ground of this proof, yet the validity of reasoning as an independent organ cannot be impeached. Reasoning proves the absurdity of the opponent's position by means of a logical probans and by reason of the necessary concomitance between the probans and the probandum. It is thus nothing but inference. And if the conclusion recorded by reasoning e.g. the impossibility of the mortality of the soul be regarded to operate as the logical ground for inferring its immortality and thus it be regarded as a helpful condition of inference, the Naiyāyika must admit that whether as an independent instrument for establishing the logical ground, or as an auxiliary condition, reasoning has got an intrinsic validity of its own[1]. If, on the contrary, reasoning be denied all validity, it cannot be supposed to function as the condition either of proof or of disproof. When the Naiyāyika asserts that reasoning only serves to eliminate doubt which holds inference in check, he must admit that it can succeed in its mission only if it possesses a validity of its own, since an invalid cognition cannot be of any avail in the determination of a truth[2].

We need not give a survey of the arguments recorded in the *Vyomavatī*, since they are substantially in agreement with the arguments of Śrīdhara. Vyomaśivācārya, the author of the *Vyomavatī*, clearly and emphatically maintains the view that the finding of reasoning is necessarily valid and the attempt to deny validity to reasoning is suicidal[3]. If reasoning were invalid it could not make any contribution to the determination of truth. Reasoning has been held to eliminate doubt or diversion of enquiry after the opposite alternative. But it can rebut doubt and preclude opposite enquiry only if it can succeed in giving a valid assurance that the opposite alternative is logically untenable. And this assurance could not be expected to emanate from reasoning if it were an invalid assumption. Vyomaśivācārya accordingly concludes that reasoning must be an organ of knowledge, and

1 NK, p. 104.
2 *Ibid.*
3 sa tu tasmiṃs tad itirūpatvān niścaya eva. VVṛ, p. 533.

as such must be subsumed either under perception or inference[1]. Śrīdhara, we have found, maintains that reasoning is nothing but a case of inference, pure and simple. Barring this difference between the two commentators, both of them are agreed that reasoning is an organ of knowledge and its finding is valid. Udayana, as the author of the *Kiraṇāvalī* which is another commentary on Praśastapāda's work, has sought to include reasoning under erroneous knowledge. We have already criticised this venture of Udayana and so we abstain from an elaborate treatment of this novel position[2] in the present context.

1 VVṛ, p. 533.
2 *Vide* chapter iv, p. 87.

CHAPTER V

THE STATUS OF REASONING IN MADHVA'S SCHOOL AS ELUCIDATED IN THE *PRAMĀṆAPADDHATI* BY JAYATĪRTHA

We indicated at the outset of chapter iv that reasoning has been given the status of an independent cognitive instrument in the Madhva school of thought. The followers of Madhva, the redoubtable advocate of absolute dualism, have shown a remarkable tendency for original thinking not only in the field of metaphysics and exegesis on ancient texts, but also in the realm of epistemology and logic. The Mādhvas are uncompromising realists and as such are expected to be in agreement with the representative thinkers of the other realistic schools of India, viz. Nyāya, Vaiśeṣika, Mīmāṃsā and Jaina. But though points of agreement are considerable between the Mādhvas and the other realistic philosophers so far as the ultimate conclusions are taken into account, the approach and the mode of argumentations adopted by the writers of the school of Madhva do indeed present a striking contrast to those of their predecessors in the cognate schools of thought. The Mādhvas are not the persons to say ditto to the findings of their predecessors, whether opponents or friends. It is no doubt true that they have utilised and benefited by the speculations of the previous thinkers, but there is found in a remarkable measure a freshness of approach and originality in the consideration of every important problem. It is almost certain that a student of Indian thought can expect to learn something new in the writings of the philosophers of this school. We have shown in our exposition of the speculation of the Nyāya-Vaiśeṣika school that the representative exponents of this school of philosophy have given a half-hearted recognition to reasoning as a logical organ, although it cannot be denied that they have bestowed most critical and minute thinking on the problem and have handsomely recognised the necessity and utility of reasoning as a helpful condition for the realisation of truth and certitude in belief. Reasoning has been made rather a parasite and the tradition in the Nyāya school is absolutely uniform that it cannot

be given a status of an independent instrument of knowledge, though its services cannot be dispensed with without jeopardy.

Jayatīrtha is an outstanding writer of the Mādhva school. In learning, scholarship and dialectics, he may be favourably compared with some of the greatest intellectual stalwarts that every school of Indian thought has produced. He is assuredly one of the greatest protagonists of Madhva's school and it can be asserted without any mental reservation and without the slightest exaggeration that the prestige enjoyed by this school of philosophy is in a remarkable degree due to the contributions of this man. Jayatīrtha stands in a class apart whether he writes a commentary or an independent treatise. He is a bold thinker and a man of unshakable conviction and has the courage to set forth his views in a challenging manner bolstered up by convincing logic. Jayatīrtha gave the lead, which was followed up by Vyāsatīrtha and others, in the enterprise of re-examination and re-valuation of the contributions of previous thinkers. In the *Nyāyāmṛta*, Vyāsatīrtha delivered a terrible onslaught on the monistic philosophy of Śaṅkara's Vedānta. And but for the masterful defence of monistic philosophy by Madhusūdana Sarasvatī in the *Advaitasiddhi* the chances are that the Śaṅkarite Vedānta would have suffered an irrecoverable set-back, if not total eclipse. The attacks of these writers on the speculations of the Nyāya-Vaiśeṣika school even in their latest orientation given by the logicians of Mithilā and Navadvīpa are of a formidable character. It is a singular phenomenon that the criticisms of Nyāya speculation did not evoke a counter-reply from the Naiyāyikas. The reason for this silence on the part of the Naiyāyikas is perhaps to be found in the comparative lack of publicity of these writings, particularly in Mithilā and Navadvīpa. Thanks to the boon of the modern press a student of Indian philosophy finds himself in a position of advantage in that he has the inestimable privilege of access to these works of Madhva's school, which were formerly jealously guarded from the irreverent gaze of intruders. The jealousies of medieval philosophers have died out for good and for evil. For good, because a modern student starts without a preliminary bias and is not subject to any extra-academic influence and consideration in his evaluation of these

treasures of Indian thought, which impose upon him an equal claim for study and examination. For evil, because a modern student cannot be expected to approach these classics with the ardour and the enthusiasm of an orthodox zealot. The old age of epical fascination is irrevocably gone by. But a student of philosophy who possesses a legitimate passion for philosophical speculation can be expected to do justice to the philosophers of the past age, though he may somewhat lack in the intensity of burning faith, which characterised his predecessors who could swear by their convictions.

Jayatīrtha has written a standard work on logic and epistemology from the standpoint of Madhva's school. He has given due consideration to reasoning and the results of his study of it are entirely at variance with the conclusions reached in the whole literature of the Nyāya and partly of the Vaiśeṣika schools, which had been expounded by us in the previous chapters. Jayatīrtha regards reasoning as a species of inference[1] and as such an independent organ of knowledge, whereas the Naiyāyikas of the old school have considered it to be only a helping condition and an auxiliary to an accredited organ of knowledge. We have seen that Gaṅgeśa Upādhyāya, the founder of the modern school of logic, has regarded it as a helpful condition for the intuition of universal concomitance, and as such he makes it subordinate and subservient to perceptual cognition[2]. Jayatīrtha challenges all these writers on logic and unhesitatingly declares reasoning to be a valid cognitive instrument in its own right.

In the chapter on inference of the *Pramāṇapaddhati*, Jayatīrtha propounds several ways of classification of inference. In one of these classifications he places inference under two broad heads, namely, (i) inference for establishing a conclusion (*sādhanānumāna*) and (2) inference for refutation of the opponent's position (*dūṣaṇānumāna*). He divides the latter variety into two sub-kinds, namely, (i) for proof of a defect in the argument employed by the opponent (*duṣṭipramitisādhana*) and (2) reasoning (*tarka*)[3]. The first consists in proving the incom-

1 tarko' numānam eva. PP, p. 14.

2 Cf. *supra*, c. iii.

3 sādhanānumānaṃ dūṣaṇānumānaṃ ce' ti. dūṣaṇānumānam api dvedhā. duṣṭipramitisādhanaṃ tarkaś ce' ti. PP, p. 36.

petency of the probans employed for establishing the probandum. In other words, it consists mainly in the exposure of a fallacy in the opponent's argument. The second variety is mainly concerned with the rebuttal of the objection, advanced by the opponent, by a *reductio ad absurdum*. Jayatīrtha accordingly considers reasoning to be a variety of inference for refutation of a position (*dūṣaṇānumānaviśeṣa*). He has defined reasoning as the admission of an undesirable contingency necessitated by the admission of a false issue[1]. The commentator Janārdana Bhaṭṭa explicates it as the enforced admission of a contingency as the condition and presupposition by the admission of a fact necessarily conditioned by the former by reason of the necessary concomitance between them. When the occurrence of A is necessarily determined by the occurrence of B, that is to say, when A cannot possibly occur if B is not present, A is said to be a necessary concomitant (*vyāpya*) and B as the determinant of the concomitance (*vyāpaka*). The determinant of concomitance (*vyāpaka*) is inferred on the ground of the determinate in concomitance (*vyāpya*). We will call the determinant in concomitance for the sake of brevity determinant concomitant (*vyāpaka*) and the determinate in concomitance (*vyāpya*) simply determinate concomitant. The meaning of Janārdana's comment can thus be expressed: the admission of a determinate concomitant makes the admission of a determinant concomitant inevitable[2]. Janārdana Bhaṭṭa regards such reasoning to be a case of inference and he seeks to prove his contention by means of inference, namely, "Reasoning is a species of inference, because it generates mediate cognition by virtue of necessary concomitance, like the well-known case of the inference of fire from smoke by reason of necessary concomitance of the latter with the former"[3]. Just as the probans is the instrument of proof of the probandum in virtue of necessary concomitance between them, so also the probans hypothetically assumed, that is the ground according to the terminology we have adopted, is the instrument of the proof of

1 kasyacid dharmasy 'āṅgīkāre 'rthāntarasy āpādanaṃ tarkaḥ.
PP, pp. 36-37.

2 PPṬ, pp. 36-37.

3 tarko' numānaṃ vyāptibalena parokṣajñānajanakatvāt.
Ibid., p. 38.

the consequent by virtue of necessary concomitance. It is argued that when the ground of reasoning works on the basis of necessary concomitance, just as the probans does in the accredited cases of inference, the former (reasoning) should also be regarded as a case of inference and nothing else. It is necessary concomitance that is the basis and foundation of inference and reasoning has also this basis alone. So there is no reason to demarcate reasoning from inference and to give the latter a status superior to the former.

It may be contended against this that in inference the major premise and the minor premise are the necessary condition. Or to put it the other way about, in accredited cases of inference the probans is shown to stand in necessary concomitance with the probandum in the major premise (*vyāpti*) and is again shown to be actually present in the subject in the minor premise (*pakṣadharmatā*). These two are the necessary conditions of inference and the lack of one or the other makes inference impossible. In reasoning, however, there is the necessary concomitance between the ground and the consequent no doubt, but the ground is never actually present in the subject. Thus, there is the major premise, but the minor premise is conspicuous by its absence. The ground is only hypothetically superimposed upon the subject and the arguer is all the while conscious of the unreality of the relation of the ground with the subject. A concrete illustration will make the position clear. "If the lake were possessed of smoke, it must be possessed of fire", is a case of reasoning. The arguer is definitely aware that smoke is not and cannot be actually present in the lake and so the minor premise is not possible and thus the conclusion cannot follow. The lack of the minor premise, that is to say, the lack of the actual presence of the probans or the ground in the subject, is called the fallacy of the non-existent probans. The awareness of the fallacy precludes the knowledge of the conclusion, that is, of the presence of the probandum in the subject. So reasoning cannot be a case of inference. Were it to be a case of inference, the knowledge of the ground would have to be regarded as the condition and the knowledge of the consequent would have to be regarded as the resultant. But there is no such thing as knowledge of the ground or the knowledge of the consequent, but only an assumption in either

case. Assumption can never be a case of knowledge and as reasoning is nothing but assumption in respect of both the minor premise and the conclusion, it ought not to be confounded with inference proper. Inference is knowledge definite, authentic and categorical, whereas assumption is only a hypothetical supposition, and an attempt to reach the status of knowledge which is never successful. It will be nothing but a flagrant violation of the logical fabric of human knowledge to attempt a confusion of the two, which is necessarily involved in placing them under one category[1].

Jayatīrtha observes that the objection of the opponent proceeds from lack of correct appraisal of the logical value of the fallacy called the 'non-existent probans'. It is no doubt the convention in logic that the probans should be accepted by both the parties in a debate, the proponent (*vādin*) and the opponent (*prativādin*), to be a true property of the subject. Though the actual presence of the probans in the subject is the general rule, it ought not therefore to be regarded as the essential condition of inference. What is essential is the belief in the presence of the probans in the subject, and this belief is the condition of the belief in the presence of the probandum, whether spontaneously admitted or necessarily enforced. If the opponent believes that the probans in question is present in the subject and this probans actually stands in the relation of necessary concomitance to the probandum, then the admission of the presence of the probandum in the subject on the part of the opponent is a matter of unavoidable logical necessity. The probans in question may be actually absent in the subject, but so far as the opponent is concerned, he cannot make a grievance of it against the proponent and deny that the conclusion does not follow for the lack of the minor premise. The proponent is not to blame because he only accepts the opponent's version and shows that the latter's belief in the presence of the probans in the subject makes the belief in the presence of the probandum a matter of inescapable necessity. No conclusion can follow from a probans definitely known to be absent. The presence

1 PP, pp. 38-39. *Vide* also PPṬ, pp. 38-39: nanu tarkasy'ānumānatve āpādakaṃ nirvahnitvaṃ nirdhūmatvaṃ prati liṅgam iti vācyam. nirvahnitvasya vahnimati parvate pakṣe'siddhatvena kathaṃ tarkasy'ānumānatvam.

of the probans makes the presence of the probandum inevitable, and if the opponent believes the former he cannot consistently refuse to believe the latter. The presence of the probans is a matter of belief with the opponent, and though this belief is mistaken and the proponent is definitely aware of this mistake, the opponent cannot make a complaint that the argument is vitiated by the fallacy of the non-existent probans, because the opponent is persuaded that the probans is actually existent in the subject[1].

Reasoning is a case of hypothetical inference and acts as a *reductio ad absurdum*. The probans of such an inference is necessarily assumed on the assertion of the opponent, and so is not accepted by both the parties, as is the case with ordinary inference. Though not accepted by both the parties it is accepted by one of them, namely, the opponent, for whose edification and correction reasoning is applied as a *reductio ad absurdum*. The probans in such cases of inference is certainly not believed to be present in the subject by the arguer himself. But his want of belief does not affect the validity of the inference so far as the opponent is concerned, because the latter believes in the presence of the probans. And the presence of the probandum as the necessary determinant concomitant and condition is only brought home by the arguer as a matter of unimpeachable logical necessity. So the lack of admission of the presence of the probans by both the parties cannot be made the ground of repudiating the cogency of reasoning. The admission of the presence of the probans in the subject by the arguer and the opponent alike would on the contrary take away the *raison d'etre* of the employment of reasoning as a dialectical instrument. Reasoning is a case of *reductio ad absurdum* and its purpose is to reduce the opponent to a position of absurdity by proving the untenability of the argument sponsored by him and by contrary implication ending in the vindication of the truth of the opposite conclusion. This characteristic function of reasoning, namely, its culmination in the proof of the opposite of the conclusion advocated by the opponent

1 anumānatve'pi tarkasy āpādakāsiddhir adūṣaṇam. parābhyupagamamātrasya tatra siddhipadārthatvāt. PP, pp. 38-39. *Vide* also PPṬ, p. 39.

cannot be accomplished unless the presence of the probans in the subject be shown to be wrongly assumed by the opponent[1]. Let us make it clear by a concrete example.

"If the lake were possessed of smoke, it would be possessed of fire.

But as a matter of fact it is not possessed of fire.

∴ It cannot be possessed of smoke."

If smoke were actually present in the lake and also believed to be so by the arguer he could not argue into the conclusion that the lake is not possessed of smoke. The culmination of reasoning in demonstration of the truth of the opposite conclusion can be secured only by proving the absence of the probans and the probandum both in the subject. The statement, "If the lake were possessed of smoke, it must be possessed of fire", shows the concomitance of the ground and the consequent in agreement. And the negative conclusion, "The lake is not possessed of fire and so it cannot be possessed of smoke" shows concomitance in difference between them. It is the general custom for logicians to stress in reasoning the negative conclusion alone, e.g. "The lake is not possessed of fire". This does not mean that the arguer is not interested in proving the absence of smoke also in the lake. The absence of fire necessarily entails the absence of smoke. And so the express statement of the absence of smoke in the lake is deemed superfluous. But whether expressly stated or not, the absence of smoke is a necessary concomitant of the absence of fire. If under the circumstance the arguer were to be compelled to believe in the presence of smoke in the lake as a preliminary condition as the opponent does, he would have no difference with the opponent. And so the negative conclusion could not be brought home. The possibility of the negative conclusion presupposes that the belief in the existence of the probans or the ground in the subject must be a pretence and make-believe and not spontaneous on the part of the arguer. So

1 vastutaḥ pakṣe vidyamānatve āpādakatva-vyāghātaḥ. katham anyathā na cā'yaṃ nirdhūmaḥ tasmān na niragnika iti viparyaye paryavasānam. tadabhāve ca tarka evā' bhāsaḥ syāt. PPṬ, p. 39.

the belief in the non-existence of the probans in the lake on the part of the arguer does not make inference impossible[1].

To sum up. The minor premise is undoubtedly a necessary condition of inference. And it shows that the probans is in connexion with the subject. This connexion is actual in inference and is also accepted to be such by both the parties in a debate. In reasoning the ground does not actually exist in the subject, but assumed to be present by the arguer on the admission of the opponent. There is however no logical difference between the fact that the probans is actually present in the subject and the fact that it is admitted to be present. And we have shown that the conclusion follows to the satisfaction of both the parties when the probans is admitted to be present by both of them, and to the satisfaction of the opponent when it is admitted by him alone. So the actual absence of the probans in the subject does not preclude the deduction of the conclusion and as such reasoning cannot be denied the status of inference on this ground.

Another objection against reasoning being given the status of inference is that the conclusion established by reasoning is necessarily false, since the probandum does not actually exist in the subject. The absence of the probandum in the subject is called the fallacy of the contradicted probans (*bādha*)[2]. But the Mādhvas do not regard it as a fallacy or a defect in reasoning. Undoubtedly such cases are truly objectionable in categorical inference. But the absence of the consequent in the subject is not at all a defect in reasoning, which is regarded as inference of the type called *reductio ad absurdum*[3]. The arguer does not believe in the existence of fire in a lake, nor is it an accepted conclusion. He is aware of the absence of fire in the lake as the established conclusion and the admission of the presence of fire on the

1 PPṬ, p. 39.

2 nanu tathā'pi na tarkasy'ānumānatvaṃ saṅgacchate. tarkasy'ānumānatve hy āpādyaṃ nirdhūmatvaṃ liṅgi'ti vācyam. tasya dhūmavaty abhāvād bādhaḥ. *Ibid.*

3 sādhyarūpasy aiva liṅgino bādho doṣaḥ. na tv āpādyarūpasya. āpādyatvavyāghātāt. yad āpādyaṃ tat pramāṇabādhitam eva. aniṣṭaṃ hy āpādyaṃ, pramāṇabādha evā' niṣṭatvam. na cā'tra nirdhūmatvaṃ sādhyam. *Ibid.*

contrary would constitute the fault called acceptance of a position opposed to his own accepted conclusion (*apasiddhānta*). This is certainly a fault in categorical inference, which seeks to establish an independent conclusion (*sādhakānumāna*). But in a *reductio ad absurdum* the enforced emergence of the conclusion, showing the necessity of the admission of the absence of smoke, does not involve any such fallacy or defect[1]. What the arguer aims at proving is this that the admission of the false minor premise makes the admission of the false conclusion unavoidable, and thus by negative implication he proves that the truth lies in the contradictory of the conclusion. What are the defects of categorical inference, that is, an inference which seeks to establish a conclusion by means of a probans and a probandum actually present in the subject, are not the defects of a hypothetical inference, which is called a *reductio ad absurdum*. On the contrary the actual absence of the probans and the probandum in the subject, which respectively involves the fallacy of non-existent probans and contradicted probans in categorical inference, which aims at a true conclusion, are really the conditions of the inference known as *reductio ad absurdum*[2]. If however we look far and close, we shall find that both the types of inference, which we have called categorical and hypothetical, conventional inference and *reductio ad absurdum*, will be found to culminate in the finding of a truth. In categorical inference neither the major premise alone nor the minor premise by itself can establish a conclusion but the combination of the two does it. So also the *reductio ad absurdum* apparently records a false conclusion when taken by itself. But taken by itself it is only an incomplete argument. It is only when it is taken in combination with the negative conclusion, which is the logical culmination, that a *reductio ad absurdum* can function as a completed logical organ. Understood in this light the *reductio ad absurdum* can be free from all the objections that have been advanced against it by the Naiyāyikas who took it apart from its negative im-

1 ata eva nā'pasiddhānto'pi. sa hi siddhāntaviruddhasya sādhane syāt, na tv āpādane. PPṬ, p. 39.

2 tasmāt sādhanānumāna eva bādhāpasiddhāntayor dūṣaṇatvaṃ na prasaṅgānumānarūpe tarke, pratyuta tayor bhūṣaṇatvam eva. *Ibid. Vide* also PP, p. 39.

plication. Jayatīrtha quite legitimately emphasises the necessity of taking a full and comprehensive view of reasoning as a logical organ. Reasoning consists of *reductio ad absurdum* as only one half and the negative implication as the other half; the two together make a completed whole, and it is only as such a whole that it functions as a logical organ[1]. The hostile criticism of the Naiyāyikas has been inspired by their acceptance of reasoning in the first half and their failure to take account of the other. That the two together end in the proof of a true proposition does not admit of doubt. Jayatīrtha observes that there is not the slightest justification for the repudiation of reasoning as an organ of knowledge. It is not only an accredited organ of knowledge, but falls under inference. The essential character of inference lies in the necessary concomitance of the probans and the probandum and it is this fact alone which makes the deduction of a conclusion a possibility. It is admitted on all hands that reasoning also draws its sole probative force from the actual presence of necessary concomitance between the ground and the consequent. This should be accepted as legitimate ground for placing reasoning under the head of inference. Jayatīrtha accordingly concludes that reasoning is an accredited organ of knowledge and is subsumed under inference.

It is remarkable that European logicians also regard *reductio ad absurdum* as a species of inference and this may be regarded as lending further countenance to the position of Jayatīrtha. But there is a vital difference between them. Whereas European logicians are satisfied with formal consistency alone and as such even a false major premise may be regarded as warranting a logically consistent conclusion, Jayatīrtha in common with the whole class of orthodox Indian logicians will not admit the validity of such inference.

All men are immortal.
∴ Socrates is a man.
∴ Socrates is immortal.

1 yathā sādhanānumāne na vyāptimātram, nā' pi pakṣadharmatāmātraṃ sādhyapramitisādhanaṃ kintu militam eva. evam aniṣṭāpādanaṃ viparyaye paryavasānaṃ co' bhayaṃ militam evā 'numitisādhanaṃ bhavatī' ti tarkasya prāmāṇyam upapadyate. PP, p. 40.

is a perfectly valid syllogism in formal logic. But Jayatīrtha would not give any countenance to it. The European logicians, therefore, have no special difficulty with the *reductio ad absurdum* being regarded as a case of inference. But Indian logicians insist upon the material truth of the premises as well as the conclusion as the fundamental characteristics of inference. Inference with Indian logicians and so with Jayatīrtha is not an exercise in formal consistency, but an accredited organ of knowledge. And so the false minor premise is the cause of a real difficulty. Jayatīrtha points out in defence that though the minor premise is false, the major premise is true and the negative conclusion which is the ultimate outcome of reasoning is a true finding. So Jayatīrtha overcomes the difficulty caused by the lack of truth of the minor premise by his arguments, which we have produced before, and he lays stress quite legitimately upon the material truth of the major premise and the negative conclusion, and on this basis declares reasoning to be an accredited organ of knowledge.

Reasoning is regarded by the Naiyāyikas as only an auxiliary to an organ of knowledge and as what only helps the activity of a cognitive organ by removing an impediment in the way. This removal of impediment is asserted by Vācaspati Miśra to consist in the elimination of doubt and by Udayana to consist in the removal of enquiry after the opposite possibility[1]. Jayatīrtha partially agrees with Vācaspati Miśra when he admits that reasoning on some occasions serves to eliminate doubt of the opposite alternative and in this way helps the realization of truth by means of an accredited organ[2]. But he differs from the Naiyāyikas by regarding reasoning as an independent organ irrespective of its bearing upon another organ. Reasoning no doubt acts as a helpful condition by serving to eliminate doubt, which creates a deadlock; but this is not the only rôle played by reasoning. It also plays an independent part as an instrument of inference. Thus, for instance, when a person is deterred from inferring fire in a hill on the ground of smoke by a doubt of the necessity of fire's occurrence,

1 Cf. *suprà*, c. i.

2 kvacid viparītaśaṅkānirasanadvāreṇa pramāṇānām anugrāhako'pi bhavati 'ti. PP, p. 40.

reasoning comes to his aid in the removal of the doubt. Here reasoning aids the realization of inference. Jayatīrtha is thus in agreement with the Naiyāyikas in so far as reasoning is regarded as a helping factor. But as has been pointed out by Janārdana Bhaṭṭa, reasoning can also serve to establish a conclusion independently of a categorical inference. For instance, suppose that the subject of debate is propounded by the umpire on the basis of the divergence of views in the form "The hill is either possessed of fire or not". That the hill is possessed of fire can be established by a *reductio ad absurdum* independently of the aid of a categorical inference is shown as follows. "If the hill were devoid of fire, it would be devoid of smoke. But it is not devoid of smoke and so it cannot be devoid of fire". Reasoning as a hypothetical argument in the present case establishes the conclusion that the hill cannot be destitute of fire and so by the negation of the absence of fire establishes by implication that the hill is possessed of fire[1]. It cannot be objected that the argument in question is only negative in character being based upon the concomitance in difference, which is only an auxiliary of the concomitance in agreement and as such has no independent probative value of its own. But there is not the slightest reason for denying the cogency of the negative concomitance. On the contrary the observed concomitance in agreement cannot be established on a footing of universal and necessary truth unless the opposite alternative is ruled out as an impossibility, which is effected by negative concomitance. The cogency and independent validity of reasoning as a type of inference based on negative concomitance cannot, therefore, be repudiated without weakening the foundation of inference, that is to say, without leaving the knowledge of universal concomitance open to doubt[2].

Jayatīrtha definitely maintains that reasoning is an independent organ and is subsumed under inference. Reasoning is a case of hypothetical inference and the latter is as much possessed of cogency as

1 adrir agnimān na ve'ti vipratipattau sādhanānumānaṃ vinai'va yadi niragnikaḥ syāt tarhi nirdhūmaḥ syāt na cā'yaṃ nirdhūma iti tarkarūpānumānen aivā 'gnisiddheḥ. PPṬ, p. 40.

2 *Ibid.*

categorical inference is accepted to be. The Naiyāyikas have consistently ignored the claims of hypothetical inference and think that it is only of service as a pendant to categorical inference. We have shown how reasoning as a hypothetical argument serves to establish a conclusion, primarily a negative and secondarily a positive one. And even when it serves to confirm and reinforce the finding of a categorical inference, it does not forfeit its status as an independent organ. That one cognitive organ may serve to confirm the finding of another cognitive organ without forfeiting its status as an independent cognitive organ is admitted by the Naiyāyikas when they declare the possibility of the convergence of several cognitive organs on a self-same object of knowledge (*pramāṇasaṃplava*)[1]. To take a concrete example. A man is told by a reliable person that there is a lake in the neighbourhood. On moving forward he observes the flight of aquatic birds and thereby infers the presence of water. On moving further on he finally reaches the lake and observes the water there. In this case the knowledge of water is first derived from verbal testimony; in the second place, the same is confirmed by inference and in the third place, it is secured by perceptual observation. All the three species of knowledge, verbal, inferential, and perceptual have for their object the water of the lake and nothing else. The first knowledge is confirmed by the second and the second by the third. Though the second cognition thus reinforces and confirms the first, and the second in its turn is corroborated by the third, nobody would commit the blunder of repudiating the independent status of the second and third cognitions as independent cognitive instruments. The case of reasoning is exactly on a par. Though it confirms and reinforces the finding of another cognitive instrument, it does not thereby assume the status of a subordinate appendix. Like the second and third cognitions of the aforesaid example reasoning never forfeits its independent character. The findings of Jayatīrtha and his followers are in complete agreement with those of the Jaina logicians, with this exception that whereas the latter

1 tasmād yathā pramāṇasaṃplave dvitīyaṃ pramāṇabhūtaṃ eva, prathamadārḍhyahetutvena pramāṇānugrāhakaṃ tathā tarko'pi pramāṇam eva pramāṇānugrāhakaḥ. PPṬ, p. 40.

regard it as an extra kind of organ, the former have subsumed it under inference. It is remarkable that the Buddhist logicians call reasoning a species of inference (*prasaṅgānumāna*) and the agreement of the Mādhvas is more pronounced with the Buddhists than the Jainas. It is a pity that the Buddhist's speculations on reasoning as *prasaṅgānumāna* are not available in a systematic form. The contributions of the Mādhva logicians may however be regarded as a rational elaboration of the Buddhist position.

CHAPTER VI

REASONING AS ELUCIDATED IN THE *NYĀYASUDHĀ* BY JAYATĪRTHA

Jayatīrtha has written a learned commentary on Madhvācārya's *bhāṣya* on the *Brahmasūtra*. The commentary is called the *Nyāya-sudhā* and is an authoritative standard work of the Mādhva school. Students of Indian philosophy are undoubtedly aware of the fact that commentaries are not merely parasitical works, but independent contributions necessitated by the criticisms of the rival philosophers. It has been the fashion in Indian academies that scholars preferred the style of commentaries to pretentious original works, although the commentary is to all intents and purposes an independent work, setting forth views not necessarily sponsored by the original authors, and being chiefly preoccupied with the refutal of the criticisms that have been levelled against the original works by hostile critics. The *Nyāyasudhā* is an extremely elaborate work and whenever any problem is broached in it, it has received a thorough-going treatment and elaborate consideration in which the views of the rival thinkers have been expounded with meticulous care and the criticism has been as elaborate as it has been relentless. In his comment on the *Brahma-sūtra* III. ii. 1, Jayatīrtha has dwelt at length on reasoning and has given a survey of the views of the writers of the Nyāya school beginning with the author of the *Nyāyasūtra* and coming down to Udayanācārya[1]. We have already dealt with the views of these writers and so we do not propose to give an account of the treatment that has been accorded to the speculations of these writers by Jayatīrtha. The special point of interest lies in the position adopted by Jayatīrtha with regard to the logical status of reasoning, which he takes considerable pains to prove to be a variety of inference.

1 Nsu, pp. 477-78.

The speculations recorded in the *Pramāṇapaddhati* by Jayatīrtha are rather a succinct summary of the findings recorded by him in the *Nyāyasudhā*. We do not therefore hesitate to go to the main source in the *Nyāyasudhā* even at the risk of some amount of reduplication in order to give a fuller account of Jayatīrtha's disquisition on reasoning, since we are conscious that our representation as confined to the *Pramāṇapaddhati* is bound to give the appearance of a scrappy and fragmentary treatment, unless supplemented by the findings of the *Nyāyasudhā*.

Jayatīrtha observes that a debater whether in the rôle of a proponent or an opponent is mainly concerned with a two-fold task, namely, the establishment of his own thesis, and the refutation of the thesis of the other party[1]. In order to accomplish the first objective, that is to establish his own position, it is necessary that all the factors of syllogistic reasoning, namely, the subject, the probans, necessary concomitance and the example cited by him should be acceptable to both the parties[2]. Thus, for example, in the syllogism "The hill is possessed of fire, because it is possessed of smoke. All that is possessed of smoke is possessed of fire, as for example, the kitchen", the hill as the subject, smoke as the probans, the universal proposition, and the kitchen as the example, are accepted and approved by both the parties. This is an instance of the syllogism employed for the establishment of one's own thesis. It is essential to bear in mind that whenever a syllogistic inference is employed for the proof of one's own position, all the factors involved in it must receive the certificate of approval from the arguer himself and the opponent as well. It is not possible that such syllogisms can pass muster if any of the factors concerned be a matter of doubt.

It is possible to contend that insistence on the unanimous acceptance of all the factors of inference is rather a counsel of perfection, and if this be regarded as the minimum condition, the scope of inference

1 dvivdhaṃ hi kāryaṃ kathakasya svapakṣasādhanaṃ parapakṣadūṣaṇaṃ ce'ti. Nsu, p. 478.

2 tatra sādhanaṃ svaparasaṃmatair eva nyāyaiḥ kāryaṃ nā'nyataramātrasiddhaiḥ. *Ibid.*

will be necessarily narrowed down to a field of trite cases and it will have very little value as a logical organ in metaphysical speculations, where the differences between the rival schools are much too fundamental. Let us elucidate the position by a concrete example. The Naiyāyika is definitely of the opinion that words are perishable, whereas the Mīmāṃsists and the Grammarians are equally strongly persuaded that words are eternal facts. The Naiyāyika would seek to prove his position by the following syllogism: "Words are perishable, because they are products. All that are products are perishable, for instance, a jar"[1]. The Mīmāṃsists would not accept the probans to be true. According to them words are eternal entities, which are revealed by the sounds produced. The Naiyāyikas on the other hand are definitely convinced that there is no difference between word and sound. So according to them a word is as much a product as sound is. However firm may be the conviction of the philosophers concerned, neither can hope to convince the other party of the truth of his position, since the opponent will always disagree about the truth of the probans employed. The Mīmāṃsist will naturally refuse to believe that word is a product and hence the use of the syllogism in question by the Naiyāyika will be entirely abortive. The Mīmāṃsist will plead that the probans is not acceptable to him and hence the condition of inference is lacking. What is then the remedy in such a situation? It seems that the situation is hopeless if unanimity on the truth of the subject, the probans, the universal proposition and the example be made the necessary condition of the validity of the syllogistic argument. But the situation is not so desperate as it seems at first sight. If the Mīmāṃsist takes exception to the validity of the probans, the remedy lies in the proof of the probans to the satisfaction of an impartial judge, if the opponent pretends to be unconvinced. In the case under consideration the Naiyāyika will be called upon to prove that word is a product, and if he succeeds in establishing the proposition that word is a product, the Mīmāṃsist will be obliged to accept the consequence involved by the truth of this proposition. The Naiyāyika may argue

1 yathā śabdo'nityaḥ kāryatvāt.
Nsu, p. 478.

that there is no difference in kind between the effort required for the production of a jar and that required for the production of a sound[1]. There is no evidence that word is a pre-existent fact manifested by an effort like the water in a well. Besides, there is no convincing argument for belief in a metaphysical entity, which is not cognisable by a sense-organ, but which is to be regarded as the real word-essence. The Naiyāyika would contend that word and sound are identical, since our knowledge of word is always secured by means of the auditory organ. And so sound and word being proved to be identical, there is no justification on the part of the Mīmāṃsist for refusing to regard it as a product, which he admits sound to be.

The main point at issue is this. If one has to prove one's position in the teeth of the opposition of a rival, one can succeed in the task if the probans employed is accepted to be true by both. If however there is a difference about the truth of a particular probans, the centre of debate is shifted to the probans itself, and the successful culmination of the initial argument depends upon such proof.

The inference for refutation can assume two forms: (1) this is not possible; (2) the admission of it leads to an undesirable consequence. So far as the first type is concerned, the apparatus of inference must be acceptable to both the parties[2]. To take a concrete example. Kumārila Bhaṭṭa holds that word is a substance and the Vaiśeṣika maintains that it is a quality. The Vaiśeṣika argues that the position of Kumārila is untenable and in support advances the following syllogism : "Word is not a substance, since it is perceptible by the organ of hearing. All that is so perceptible is not a substance, just as the universal is"[3]. In this form of inference the probans is acceptable to both the parties. It is in the same position with the inference for establishing one's own position, so far as the unanimity on the apparatus of inference is the ruling condition. In case there is a difference of opinion

1 kāryaś cā 'sāv avyañjakaprayatnānantaropalabdher ity ādi.
Nsu, p. 478.

2 dūṣaṇaṃ tu dvividhaṃ. idam itthaṃ na bhavati ti vā aniṣṭopadarśanena vā. tatrā'dyam ubhayasiddha-nyāyair eva kāryaṃ. *Ibid.*

3 śabdo na dravyaṃ śrotragrāhyatvāt sāmānyavad iti.
Ibid.

on the validity of the probans or the universal proposition the inference is brought to a standstill, and it can be set in motion only by meeting the objection of the opponent. In the syllogism cited here the Mīmāṃsist may contend that the probans is inconclusive, since there is no bar to a substance being audible. Time is perceptible by all the sense-organs and so is perceptible by the organ of hearing, but time is a substance. The Vaiśeṣika can prove his contention only by proving that the probans is conclusive. In actual fact, the Vaiśeṣika has argued that time is a supersensible entity and its existence is capable of being proved only by inference. The Vaiśeṣika's argument will be effective and valid only if he can succeed in refuting the Mīmāṃsist's contention and proving that the probans and the universal proposition are to be accepted by the Mīmāṃsist. The truth is this. A categorical inference whether employed for establishing one's own position or for refutation of the opponent's thesis must be based on an apparatus, which is accepted by both. In refutation, the probans and the universal proposition must be acceptable to the opponent otherwise it will fail of its purpose[1]. In the second type of inference, stress is laid on the agreement of the opponent in respect of the probans and the universal proposition, and the arguer's belief or disbelief is considered irrelevant. This type of inference is called reasoning and assumes the form of a hypothetical proposition[2]. The example of it is the following argument. "If the hill were devoid of fire, it would be devoid of smoke". The first clause states the ground or the probans and the second the consequent or the probandum. The ground is not believed to be proved by the arguer and is stated by him hypothetically in order to disarm the opposition of the opponent, who would dispute the presence of fire in spite of the presence of smoke. But it is not only not necessary that the probans should be accepted by the arguer to be true, but on the contrary he must be aware of its falsity. If it were not so, the hypothetical inference would

1 Nsu, p. 478.

2 dvitīyaṃ tu parasiddhair eva nyāyaiḥ (kāryam)...........tad eva ca tarka iti vyavahriyate. *Ibid.*

not operate as *reductio ad absurdum*. What is necessary in this type of inference is that the probans or the ground should be acceptable to the opponent. The universal concomitance between the ground and the consequent need not also be objectively true. It will suffice if it is accepted to be true by the opponent. The type of inference, in which the major premise and the minor premise are necessarily accepted to be true by the opponent and only assumed by the arguer for bringing out an absurd consequence, which necessarily follows from the assumed ground, is called reasoning (*tarka*)[1]. It is known as *reductio ad absurdum* in European logic. The falsity of the subject or the minor term and of the probans, which is a real defect in categorical inference, is not only not a defect in the *reductio ad absurdum*, but rather is the condition of it. The absence of fire in the hill, which is the ground in the hypothetical inference, is not established by an accredited organ of knowledge, but rather assumed by the arguer, who actually believes in the presence of fire, for bringing out the absurd consequence.

It may not be out of place to make an observation on the conception of universal concomitance as advocated by the Naiyāyikas on the one hand, and the Jainas and the followers of Madhva on the other in order to refute the charge of the lack of co-existence of the probans and the probandum that has been advanced against the claim of reasoning as an accredited type of inference. It has been urged by the Naiyāyikas that the ground and the consequent (for instance, absence of fire and the absence of smoke) are not co-present in the subject (the hill), and so there can be no objective universal concomitance between them. Thus, the lack of universal concomitance makes inference impossible. Apart from the consideration that the lack of objective concomitance between the ground and the consequent is no impediment in *reductio ad absurdum*, which may also be a matter of assumption for the arguer, it is worthy of remark that the Mādhvas and the Jainas do not believe that the co-presence of the two terms is a necessary factor of universal concomitance at all. According to

1 Nsu, p. 478.

them the universal concomitance can be established where the one term cannot be conceived to be possible without the presence of the other[1]. There is a necessary relation between them no doubt, but the relation is not necessarily one of co-existence in the same substratum. So there is no difficulty when the presence of one term in one place and time involves the presence of the other term in another place and time. Spatial or temporal co-existence is not a necessary factor of universal concomitance. Thus, there is no difficulty in the case where the occurrence of the flood in the lower region of the river is the ground of the inference of a heavy downpour in the upper region. There is neither temporal nor spatial co-existence between them, but still there is no difficulty in inference, because the concomitance between them is necessary and universal[2]. We have seen that temporal or spatial co-existence is not an element in universal concomitance and so the lack of it in the universal proposition in *reductio ad absurdum* cannot be made a grievance against those who think reasoning to be a type of inference nonetheless.

We now propose to take into consideration a set of objections that have been advanced by the Naiyāyikas against the claim of reasoning to the status of inference. The first objection is that the conditions of accredited inference and reasoning are fundamentally different and this difference of conditions must entail a fundamental difference in the character of the result. Accredited inferences consist of categorical assertions and the probans is admitted to be materially true by both the parties, whereas reasoning consists of a hypothetical minor premise, and the probans affirmed of the subject is materially untrue. It is preposterous that the two cases should be held to be similar in spite of this material difference in the conditions. And as regards the result there is also a material difference to be observed. In inference, the result is a true conclusion, while in reasoning, the conclusion is a

1 yaddeśakālasambaddhasya yasya yaddeśakālasambaddhena yena vinā anupapattiḥ tasya tena sā vyāptiḥ.

TT. Ms. pp. 3-4 (chapter on inference).

2 etena sāhacaryaniyamo vā, anaupādhikaḥ sambandho vā, sādhyātyantābhāvavadavṛttitvaṃ vā vyāptir iti nirastam. vyadhikaraṇayoḥ pūravṛṣṭyoḥ deśataḥ kālato vā sāhacaryasya sambandhasya vā asambhavāt nadīpūrasya vṛṣṭirūpasādhyābhāvavadadhodeśavṛttitvāc ce'ti. *Ibid.*

false issue. Jayatīrtha in reply maintains that this difference in conditions is not fundamental. We shall show that the essential condition of inference is the same in categorical and hypothetical inference known as reasoning. The difference of minor detail does not involve a difference in the fundamental character of the result. The Naiyāyikas admit the validity of three types of inference, namely, exclusively affirmative (*kevalānvayī*), exclusively negative (*kevalavyatirekī*) and affirmative-cum-negative (*anvaya-vyatirekī*). The conditions of inference are different in each type. For instance, in the affirmative-cum-negative inference, the probans is said to possess five characteristics, namely, (1) presence in the subject (*pakṣasattva*); (2) presence in the homologue (*sapakṣasattva*); (3) absence in the heterologue (*vipakṣāsattva*); (4) immunity from opposition by a countermanding probans (*asatpratipakṣitatva*); (5) immunity from contradiction (*abādhitatva*). In the first type of inference, the heterologue is an impossibility and so the third characteristic, namely, absence in the heterologue is out of the question. Similarly in the second type of inference there cannot possibly be a homologue and so the second characteristic is conspicuous by its absence. Thus, it is found that the character of the probans is different in each type. In the first, the third characteristic is impossible and in the second, the second characteristic is found to be wanting[1]. It might be contended that the first and the second types are not true cases of inference, since the conditions are found to be deficient in one or the other characteristic of the probans[2]. The Naiyāyikas may maintain that though these specific characteristics may differ, there is no difference in the fundamental conditions, which are nothing more or less than the major premise and the minor premise; in other words, the presence of the probans in the subject and the necessary concomitance of the probans with the probandum. The fivefold characteristic of the probans is only symptomatic of this necessary concomitance with the probandum and the lack of one or the other characteristic does not disqualify a probans, provided its

1 Nsu, p. 478.

2 anyathā kevalānvayidharmasya kevalavyatirekiṇy abhāvāt tasyānanumānatvāpatteḥ. *Ibid.*

necessary concomitance with the probandum is certified. The lack of presence in the homologue or absence in the heterologue where the homologue or the heterologue are not possible, does not detract from the validity of the necessary concomitance between the probans and the probandum. What is essential in inference is the presence of the probans in the subject and necessary concomitance of the probans with the probandum[1]. Jayatīrtha in answer to this defence of the Naiyāyikas maintains that the Naiyāyikas have hit upon the truth undoubtedly, but have failed to gauge the relative value and cogency of the conditions asserted by them. The presence in the subject is only a matter of empirical truth and has no bearing upon the logical necessity, which makes the deduction of the conclusion irresistible. The logical necessity lies in the necessary concomitance of the probans with the probandum and the existence of the probans in the subject is more or less an irrelevant accident, so far as the validity of inference is concerned. The minor premise only serves to establish the actual incidence of the probandum shown in the conclusion through the incidence of the probans, but the deduction of the probandum is made possible by the necessary concomitance alone. The presence of the necessary concomitance alone is the sufficient guarantee and warranty of inference and the presence of the said probans in the subject is as irrelevant as the presence in the homologue or the absence in the heterologue. And this necessary concomitance is equally operative in (1) reasoning, (2) categorical inference for proof (*sādhanānumāna*), (3) categorical inference for disproof (*dūṣaṇānumāna*) and (4) implication (*arthāpatti*)[2]. The Mādhvas regard all these four types of arguments as cases of inference. The difference in details is only responsible for their variation as sub-species of the same genus, namely, inference.

We need not elaborately deal with the objection of the Naiyāyika on the score of the actual absence of the probans in the subject. It is

1 sāmānyalakṣaṇasadbhāvāt viśeṣalakṣaṇābhāve'pi na doṣa iti cet?
Nsu, p. 478.

2 ,,.......vyāptyapekṣayā gamakatvasya tarke'pi vidyamānatvāt.
Ibid.

a truism that the probans does not exist in the subject as a matter of fact in reasoning. In categorical inference the truth of the minor premise, which shows the incidence of the probans in the subject, is regarded as a necessary factor by all schools of logicians in view of the consideration that the arguer is interested in establishing the necessary incidence of the probandum in the subject. The demonstration of the incidence of the probandum in the subject is inspired by a practical consideration and so the incidence of the probans in the subject is to be shown as a matter of practical necessity. We have shown that the minor premise has very little bearing on the theoretical and logical necessity and so its material truth is not regarded as a material condition of inference in general, although it is not denied that it is a necessary factor in categorical inference in view of the practical interest of the arguer. In reasoning, the minor premise is hypothetically assumed in conformity with the assertion of the opponent for the purpose of showing the necessity of admission of the probandum in the subject, which does not as a matter of fact possess the same. The lack of the material truth of the minor premise is thus no valid objection against the status of reasoning as a variety of inference[1].

There is another objection, which we have touched upon in our treatment of reasoning in the *Pramāṇapaddhati*. But the elaborate discussion in the *Nyāyasudhā* throws an additional light upon the problem and this is our apology for embarking upon it over again. The objection is that the probandum that is necessarily deduced in reasoning does not actually belong to the subject. The deduction of a probandum in a subject in which its absence is proved by another source of knowledge is called the fallacy of contradicted probans. The inference of the absence of heat in fire is an instance of this fallacy. Reasoning, if given the status of inference, will be vitiated by this fallacy as the probandum is invariably unreal. Another defect is that the inference of an unreal probandum in opposition to one's previous commitment regarding the absence of the probandum is what is technically called the admission of a contrary conclusion (*apasiddhānta*) and the perpetration of this defect deprives the arguer of victory in a de-

1 Nsu, p. 478.

bate. But these charges are out of place in reasoning, because it is not a case of inference, and so not an organ of knowledge, which are alone liable to be assailed by such charges. But the advocate of the inferential status of reasoning will have no room for escape from these strictures[1].

Jayatīrtha seeks to clarify the ground of the objection of the Naiyāyika by posing a dilemma. Does the Naiyāyika mean to say that the absence of smoke cannot be inferred in the hill, because it is contradicted by the knowledge of the presence of the smoke in it? Or does he mean to show that the inference of absence of smoke involves contradiction of his previous commitment that the smoke is present in the hill?[2] But neither of these contingencies arises and so the apprehension of the Naiyāyika, which leads him to put reasoning in a separate class from inference, is groundless. In reasoning the probandum is not sought to be proved on its own account, but rather what is intended is that the admission of the probans makes the admission of the probandum inevitable. When the opponent denies the presence of fire in spite of the presence of smoke in the hill, the denial of fire is shown to involve the denial of smoke, the presence of which is indisputably attested, and so it does not lie in the mouth of the opponent to acquiesce in the absence of smoke, which is shown to follow as a necessary consequence of his refusal to accept the true conclusion, namely, the presence of fire in the hill[3]. The charges of contradiction would be inescapable if the arguer intended to establish the conclusion independently. But this is not the case. That the arguer does not independently seek to establish the absence of smoke in the hill in defiance of undisputed knowledge of the presence of smoke is apparent from the fact that the minor premise is given in a hypothetical form, namely, "If the hill be devoid of fire, it will be

1 ....bādhāpasiddhāntasadbhāvān na tarkasy 'ānumānatvam iti cet?
Nsu, p. 478.

2 kim āpādyatopetasya nirdhūmatvāder bādhyatvaṃ tatproktau cā'pasiddhāntaḥ.
Ibid., p. 479.

3 nā'dyaḥ. yata āpādanaṃ nāmā'ṅgīkartavyatājñāpanam, na punaḥ sadbhāvapratipādanam..........yadi viṣaṃ bhakṣayiṣyasi tarhi mariṣyasī'ti yathā.
Ibid.

devoid of smoke". The case is exactly on a par with such hypothetical proposition as "If you swallow poison you will die". The hypothetical proposition only states the necessary connexion between two events, namely, swallowing of the poison and death and not the actual historical truth of the events. Similarly in the reasoning "If the hill be devoid of fire, it will be devoid of smoke", only the logical connexion between the ground and the consequent is demonstrated. And the implication of it is that the admission of the ground makes the admission of the consequent inescapable and not that the ground and the consequent are actual historical truth. The fact that the arguer is not concerned in proving an independent conclusion is obvious not only from the hypothetical form of assertion, but from the fact that the logical culmination of reasoning is the demonstration of the truth of the contradictory. The employment of reasoning as *reductio ad absurdum* aims at proving that the hill is not devoid of fire as it is not devoid of smoke. The charges of contradicted reason (*bādha*) and of the contradiction of the accepted position (*apasiddhānta*) are therefore found to be creatures of a muddled logical sense[1]. As regards the charge of unreality of probans (*asiddhi*) we have shown that it is groundless and our conclusion is further reinforced by the fact that the probans is stated in a hypothetical way. The meaning of this hypothetical form of statement "If the hill be devoid of fire" is that, "If you assert it to be devoid of fire" and this assertion of the opponent is a real fact. The accusation of the fallacy of the unreal probans is thus shown to be as unreal as the charge of contradiction (*bādha*) and the charge of self-contradiction (*apasiddhānta*) have been found to be[2].

There is another objection of the Naiyāyika, which seems to be really formidable. Inference has been broadly classified under two heads, namely, one for proof of a position and the other for refutation of the position of the opponent. The Mādhvas have endeavoured to place reasoning under the second class of inference. But reasoning cannot even be regarded as a species of inference for refutation,

1 Nsu, p. 479.
2 *Ibid.*

because inference for refutation is valid only if it serves to generate the valid cognition of a real defect. Reasoning employs a logical apparatus which is not objectively true, but accepted only in consonance with the assertion of the opponent. Inference to be valid must be based upon a probans and a probandum, which are necessarily true and accepted as such by both the parties. Reasoning, on the contrary, is based on a probans and a probandum which are unreal and so cannot but be a false pretender to the status of inference. The defect that is sought to be proved by reasoning cannot but be an apparent defect and not a real one[1].

In reply to this charge Madhva has observed in his commentary that reasoning is in the same position as casuistry (*chala*) and sophism (*jāti*)[2]. Casuistry and sophism are shown to be vicious arguments only by the help of the probans and the probandum, that is, the logical apparatus, employed by the opponent and admitted to be true by him alone. If the logical apparatus is to be objectively valid and as such to be accepted by both the parties, then casuistry and sophism can never be proved to be forms of sophistry, which they actually are. The Naiyāyika may contend that the employment of the same vicious logical apparatus by him for the refutation of the sophistical arguments of the opponent is not made by way of assertion of objectively valid truth. The adoption by the Naiyāyika of the same logical apparatus employed by the sophist is made for the purpose of demonstrating that the logical apparatus employed by the latter for picking holes in the argument of the proponent acts as a boomerang against the sophist, as it serves to invalidate his own position also. In other words, the sophist is shown that the logical apparatus employed by him is suicidal, since it contradicts his own position. The Naiyāyika never gives it to understand that the logical apparatus is admitted by him to

1 dvividham evā'numānam, sādhanaṃ dūṣaṇaṃ ca. tatra tarko na sādhanam iti tāvat bhavatām api sammatam,. nā'pi dūṣaṇam, duṣṭipramājanakaṃ hi dūṣaṇaṃ nāma. na ca tarkasya tat sambhavati..........asādhunā ca jñāpyamānā duṣṭir ābhāsabhūtai ve'ti kathaṃ tarko'numānam?

Nsu, p. 479.

2 chalajātyor duṣṭatvamūlavyutpādanenai vai tat samānayogakṣemam.........

Ibid.

be valid but is all along conscious that it is unsound and vicious and so he does not expose himself to the charges that are levelled against reasoning. Madhvācārya observes in this connexion that he has compelled the Naiyāyika to make a momentous admission that the employment of a false logical apparatus in seeming deference to the opponent for the purpose of exposure of contradiction in the opponent's argument is a legitimate logical device in casuistry and sophism. Reasoning is also in the same position as casuistry and sophism. The assertion of the false probans in the subject, in one word, of the false minor premise, is hypothetically made by the arguer out of pretended deference to the opponent and not as a valid proposition. He means to assert that the assertion of the false probans by the opponent makes the assertion of the false probandum inescapable. The admission of the absence of fire in the hill makes necessary the admission of the absence of smoke, which is opposed to the evidence of every organ of knowledge. The admission, which makes necessary the admission of an issue contradicted by the testimony of all accredited organs of knowledge, is worthy of being dismissed as an absurd statement. The difference between sophism and reasoning, though both are cases of inference alike, is that sophism is vitiated by self-contradiction, whereas reasoning culminates in a conclusion, which is contradicted by an accredited organ of knowledge. But this difference is only apparent, since the admission of a proposition contradicted by the testimony of an accredited organ is ultimately a case of self-contradiction. To make an assertion opposed by the testimony of all accredited organs is to make an assertion subversive of a truth accepted universally and so by the assertor himself also. Viewed in this light reasoning will be seen to serve the same purpose as sophism does. In other words, both types of argument end in convicting the opponent of self-contradiction. The truth of this finding was anticipated by Udayanācārya, who asserted 'reasoning to operate as the limit of doubt'[1]. 'By limit' he meant reasoning to be the instrument by which the doubt of the sceptic was shown to be contradicted and this contradiction of the

1 tarkaḥ śaṅkāvadhir mataḥ.
NKu, III. 7.

doubt of the doubter is nothing but a case of self-contradiction. Madhva concludes that reasoning should be legitimately held to be a case of inference inasmuch as it is conditioned by the same logical apparatus, which makes an accredited case of inference a valid organ of knowledge and inasmuch as the objections levelled by the Naiyāyikas against reasoning being accorded the rank of inference have been found to be inspired by inadequate appraisal of the essential condition of inference.

We may refer *en passant* to Veṅkaṭanātha, the celebrated exponent of Rāmānuja's school and the elaborator of the Rāmānuja school of logic, who substantially agrees with the philosophers of Madhva's school in regarding reasoning to be a species of inference. Veṅkaṭanātha has devoted considerable attention to this problem, but the logical result achieved by him is rather meagre and may be regarded as a faint echo of Jayatīrtha's conclusion. The interest of Veṅkaṭanātha is rather textual than logical, and he has strained every nerve to demonstrate that his conclusion that reasoning is a valid instrument and a species of inference[1] at that, is not in conflict with the views of Rāmānuja and the traditional exponents of Rāmānuja's philosophy. We refrain from reproducing this exegetical enterprise, since it has very little speculative interest of its own and is calculated only to disarm the suspicion and hesitation of the loyal adherents of the school.

1 tarkasy'ānumānarāśyapṛthagbhāvāt........
NP, p. 324.

CHAPTER VII

REASONING AS ELUCIDATED IN THE *TARKATĀṆḌAVA* BY VYĀSATĪRTHA

Vyāsatīrtha flourished in the early part of the 16th century A.D. and is a representative writer of the Mādhva school, whose contributions have served to raise the status and prestige of the Madhva school of philosophy to the highest pinnacle of glory. His mastery of the dialectics of the Navya-Nyāya school of Mithilā and Navadvīpa, his meticulous knowledge of the writings of the rival schools of thought and the writings of the previous philosophers of his own school, and his extraordinary critical outlook and penetrating logical insight are abundantly proved in his writings. The *Nyāyāmṛta* and the *Tarkatāṇḍava* are the two works of Vyāsatīrtha which deserve special mention. The first, as has been observed before, created a perilous situation for monistic Vedānta and the second is a smashing onslaught on the fabric of logic built by the Naiyāyikas. The *Tarkatāṇḍava* is being published by the Mysore University, and the publication of the part which deals with inference is still awaited with considerable eagerness by scholars interested in logic. I had the singular good fortune of having access to this unpublished part in a manuscript copy, which was in the possession of the late lamented Professor S. N. Das Gupta. Professor Das Gupta with his characteristic patronage of young scholars allowed me to keep this manuscript for a considerable time, and the present chapter on reasoning is a result of my study of it in the manuscript.

We have already dealt with the dissertation on reasoning by Jayatīrtha in his two works. Jayatīrtha naturally exercised a profound influence on Vyāsatīrtha and the speculations of the latter on reasoning have naturally been influenced by Jayatīrtha's arguments. Vyāsatīrtha endorses the conclusion of Jayatīrtha and follows up the arguments produced by him. There would have been no justification for us to embark upon a fresh dissertation on Vyāsatīrtha's writing, if it had been only a slavish reiteration of the old arguments. But fortunately the treatment of reasoning by Vyāsatīrtha, though for the most part

directed into the channels carved out by Jayatīrtha, abounds in original reflections not only in respect of manner, but also matter. There will be some amount of restatement of the same topics, but we trust that it will not be unjustified, since this will be the means of introduction of new matters contributed by Vyāsatīrtha. Accordingly I appeal to the good reader who will favour this humble attempt of mine with a perusal, to make allowance for unavoidable reformulation of the same problems.

Vyāsatīrtha regards reasoning to be a case of inference in conformity with the traditional finding of his school. In order to establish this conclusion he first of all seeks to show the inaccuracy of the conception of reasoning as a case of conscious ascription, as has been set forth by the Naiyāyikas in their traditional definitions. We have shown in the concluding portion of chapter iv how the conception of service rendered by reasoning has undergone a radical change in the hands of the Naiyāyikas themselves, from being only a presumptive evidence to a categorical finding. Vardhamāna has taken pains to establish that reasoning primarily shows the absurdity of the contradictory possibility, and secondarily shows the absence of conflict and opposition of the finding of an organ of knowledge with established truth. Thus, there has been a veering round from the hypothetical assumption to a categorical finding as the service rendered by reasoning. Vyāsatīrtha lays stress upon the categorical nature of the finding registered by reasoning and gives an altogether new orientation to the conception of the nature of reasoning and its result. If it were a mere case of ascription, even deliberate (*āhāryāropa*), it would be impossible not to regard a case of deliberate ascription, as set forth in the instance we are going to state, as a case of reasoning. Suppose, for instance, the object lying ahead is ascertained to be a tree and not a human being. Suppose further, that a person still deliberately insists on regarding it as a human being, and for that purpose ascribes to it hands and feet, and concludes that he sees a human being. This would be an act of deliberate perception of the tree[1]

1 ... āhāryo 'yam āropaḥ sa ca bādhito'pi bhavatī'ti cet, na, puruṣatvābhāvaniścayānantaram pratyakṣādāv āhārye vyāpyakaracaraṇāropāj janye pratyakṣe āhāryapuruṣārope ativyāpteḥ.

TT. Ms. p. 192.

as a human being made plausible by the wilful ascription of the characteristic features of a man to it. Here the ascription or assumption of a determinate concomitant (*vyāpyadharma*) leads to that of a determinant concomitant (*vyāpakadharma*). But it is not regarded as a case of reasoning even by the Naiyāyika. He would contend that it is a case of perception and Vyāsatīrtha would endorse it as the correct finding. But why should it not be a case of reasoning? The answer is given by Vyāsatīrtha that the knowledge is not necessitated by necessary concomitance, but by the help of the visual organ or the mind as aided by it. Reasoning becomes effective only because it operates through the knowledge of the necessary concomitance alone. And this is exactly the determinate characteristic of inference. And so there is no reason to repudiate the inferential nature of reasoning[1].

Vyāsatīrtha thus disposes of the definition of reasoning as a case of ascription and defines it in terms of categorical knowledge as follows: "Reasoning is the valid cognition of the negation of probans or ground as the determinant concomitant of the negation of the probandum or the consequent as admitted by the opponent". It may be also defined as 'a valid cognition of the unavoidable admissibility of the negation of the probans entailed by the admission of the negation of the probandum.'[2] The denial of fire in a smoking hill in volcanic eruption is tantamount to the admission of the negation of smoke. Reasoning serves to show that the negation of fire stands in the relation of necessary concomitance with the negation of smoke—the former being the determinate concomitant (*vyāpya*) and the latter being the determinant concomitant (*vyāpaka*). The relation between negation of fire and negation of smoke is really one of necessary concomitance, and reasoning only brings home the knowledge of this truth. There is thus no reason to deny it the status of an organ of knowledge.

If reasoning be an organ of knowledge and a subvariety of infer-

1 tasmāt tarkaḥ anumānaviśeṣa eva, vyāptibalena gamakatvāt.

TT. Ms. p. 194.

2 manmate tv aṅgīkṛtena sādhyābhāvena saha anaṅgīkṛtasya sādhanābhāvasya vyāpakatvapramā vā. sādhyābhāvāṅgīkāranimittikā sādhanābhāvasyā 'ṅgīkarttavyatvapramā vā.

Ibid, pp. 194-95.

ence at that, as made out by the Mādhvas, it must be shown that reasoning has the same logical apparatus as inference. There must be a probans and a probandum and a necessary concomitance between the two. To revert to our old example. "If the hill be devoid of fire, it must be devoid of smoke," the probans here is the negation of fire, and the probandum is the negation of smoke. Though there is necessary concomitance between the two, the incidence of the probans in the subject, as indicated by the predication of it in the first clause of the hypothetical proposition, is unreal. Similarly also the existence of the probandum, namely, the negation of smoke as asserted in the second clause is a myth. It has been shown that these are serious defects, which make inference illegitimate and inadmissible. We have shown in the preceding chapter how Jayatīrtha admits the truth of the assertions of these facts by the Naiyāyikas and how he takes away the sting from their allegations by asserting them to be the necessary conditions of reasoning as a hypothetical inference. In other words, Jayatīrtha saves himself from the strictures of the Naiyāyikas on the score of the false minor premise and the false conclusion by the plea that he does not make these assertions as objective truths, but only as hypothetical assumptions. It has been argued that the falsity of the minor premise and the absurdity of the conclusion, though they are real defects in categorical inference, are not only not defects in reasoning as *reductio ad absurdum*, but are the necessary conditions of the same. Reasoning is only a means, which though objectively false, serves to correct the opponent of his vagary. Here the end justifies the means. We have already dealt at length with the defence of Jayatīrtha in the preceding two chapters and so we need not reproduce the version of the same as given by Vyāsatīrtha. We only propose to deal with the novel vindication of reasoning as inference given by Vyāsatīrtha and to show how he boldly equates reasoning with categorical inference, and still avoids the charge of the false minor premise and the false conclusion without taking cover under the privilege of hypothetical inference, which has been claimed by his predecessors. It becomes his modesty and reflects credit on his loyalty to the traditional exponents of the Mādhva school of thought that Vyāsatīrtha seeks to emphasise that all the findings made by him are

nothing but the logical deductions from the implications thrown out by Jayatīrtha.

The arguments of Jayatīrtha have sought to prove that though there is contradiction involved by the falsity of the minor premise and of the conclusion, still the status of reasoning as inference is not affected by it. But the problem arises. How can reasoning be accorded the status of an organ of valid cognition, when the minor premise and the conclusion are in conflict with universally accepted truths? Vyāsatīrtha does not believe that the minor premise or the conclusion of reasoning is false and so he thinks the problem to be only a false creation of the Naiyāyika, arising from his misconception of the nature of reasoning. Reasoning is requisitioned when there is doubt. Now, the doubt that a smoking hill may be destitute of fire is possible only in either of the following ways: (1) Firstly, negation of smoke may not be the determinant (*vyāpaka*) of the negation of fire. Secondly, though one may be the necessary concomitant of the other and negation of smoke be the determinant of the negation of fire, negation of smoke may yet be possible in the subject.[1] Now, the first case of doubt is dismissed by showing that negation of fire is a determinate of the negation of smoke, and this is accomplished by the hypothetical proposition, "If it be devoid of fire, it must be devoid of smoke." The hypothetical form does not imply that the proposition does not assert a categorical truth. As a matter of fact necessary concomitance between two sets of facts is usually asserted in a hypothetical form. Thus, for instance, such propositions as, "If the gayal be similar to the cow, the cow also must be similar to the former," or "If a person alive is not at home, he must be present outside," or "If there be smoke there must be fire," do not assert a tentative possibility, but a necessary and universal truth. The hypothetical form is the usual medium of expression of a necessary relation between the antecedent and the consequent clauses.[2] The second

1 sadhūmo'pi niragniko'sti iti śaṅkā hi dvedhā 'sambhavati, niragnikatvaṃ prati nirdhūmatve vyāpakatvasy aiv' ābhāvena vā, saty api vyāpakatve pakṣe nirdhūmatvasy' āpi sattvena vā.

TT. Ms. p. 201.

2 tatr'ādyaḥ nirdhūmatvasya vyāpakatvapradarśakena yadi niragnikaḥ tarhi nirdhūmaḥ ity anena nirasyate.

Ibid.

clause states the conclusion which necessarily follows from the first clause as the premise. The second case of doubt is effectively dismissed by showing the inadmissibility of the negation of smoke in the subject, which is directly perceived to be issuing smoke.

Now, the reasoning, "If the hill be devoid of fire, it will be devoid of smoke," is nothing but a case of inference in which the negation of smoke is shown to be the determinant concomitant of the negation of fire, and the whole proposition is to be considered to be the statement of the probans. The probandum of this is the proposition that the negation of the negation of smoke is the determinate concomitant of the negation of the negation of fire, according to the terminology we have adopted before. The cognition of the aforesaid probans is the instrument of the cognition of the aforesaid probandum. And both these cognitions are true, since the negation of the determinant is the determinate concomitant of the negation of the determinate.[1] To illustrate it by a concrete example, smoke is the determinate concomitant (*vyāpya*) of fire and the fire is the determinant concomitant (*vyāpaka*) of smoke, but the negation of fire is the determinate concomitant of the negation of smoke. We can infer the determinant concomitant from the determinate concomitant and not *vice versa*, because the determinate cannot exist independently of the determinant, though the latter can exist independently of the former. Thus, smoke is the determinate of fire, because it cannot exist independently of the latter. But fire can exist independently of smoke and so the negation of smoke does not entail the negation of fire. But smoke is impossible without fire and so the negation of fire necessarily entails the negation of smoke. The relative position of two terms *qua* determinant and determinate is reversed in the case of their negatives. When the positive term is determinant, the negative of it becomes the determinate.[2]

1 atra ca niragnikatvam prati nirdhūmatvasya vyāpakatvam liṅgam, tajjñānaṃ karaṇam, niragnikatvābhāvaṃ prati nirdhūmatvābhāvasya vyāpyatvam liṅgī tajjñānaṃ phalam dvayam api pramārūpam eva ...... vyāpakābhāvasya vyāpyābhāvaṃ prati vyāpyatvāc ca.

TT. Ms. p. 203.

2 vyāpyavyāpakabhāvo hi bhāvayor yādṛgiṣyate. tayor abhāvayos tasmād viparītaḥ pratīyate: *Ślokavārttika*, śl. 121-122 (chapter on inference).

We have made this digression to show that the doubt that there may be smoke without fire is set at rest by showing that fire is the determinant concomitant of smoke and negatively by showing that the negation of fire necessarily entails the negation of smoke, the latter being the determinant concomitant of the former. Likewise the negation of the negation of smoke (to put it positively, the smoke) is the determinate concomitant of the negation of negation of fire (that is to say, fire).

Let us now apply the results we have obtained to the problem at hand, viz. whether reasoning is a case of inference. The proposition "If A were devoid of fire, it would be devoid of smoke" shows that negation of fire is the determinate concomitant of the negation of smoke and so the former necessarily entails the latter. There is nothing in the proposition which can be taken exception to. It is a true assertion and serves as the probans of the assertion, "The negation of negation of smoke is the determinate concomitant of the negation of negation of fire," which is to be considered as the probandum by virtue of the fact that it follows from the previous assertion. Now both the propositions, the probans and the probandum, are true and as reasoning consists of these two propositions, there is no earthly reason to call in question its validity. The necessary concomitance between the two negations thus proved is applied in the negative implication of reasoning, which is the ultimate upshot. To be explicit, "If A were devoid of fire, it would be devoid of smoke," is the first part of reasoning, which works as the probans. "But it is not devoid of smoke" and so "it cannot be devoid of fire" is the final part of reasoning and states the conclusion or the probandum. The conclusion only asserts that negation of negation of smoke being the necessary determinate concomitant of the negation of negation of fire, the actual incidence of the former entails the incidence of the latter. The first proposition is true, because it states a necessary universal truth and the second is equally valid, as it also states necessary truth which follows from the former. These two are universal propositions and assert the necessary universal concomitance between two terms, which is not liable to be denied by any person. The assertion that the subject, say the hill, is not devoid of smoke is based on

an objective fact, and the consequence that it cannot be devoid of fire follows as a matter of necessity. Vyāsatīrtha observes that since both the probans and the probandum are true and since the necessary concomitance between them is not liable to be repudiated as false, there does not seem to be the slightest logic in the condemnation of reasoning. Reasoning has the same logical apparatus as inference and as such should be classed with it.[1]

The objection of the Naiyāyika to the validity of reasoning is based on the assumption that 'negation of fire' is made the probans and 'the negation of smoke' is made the probandum in reasoning.[2] Were it really the case, the Naiyāyika's objection would be unanswerable. But Vyāsatīrtha shows that the case is entirely different and so the accusation of the Naiyāyika is absolutely groundless. Jayatīrtha first accepted the assumption of the Naiyāyika to be true. In other words, he accepted the version of the Naiyāyika that 'negation of fire' was the probans and 'negation of smoke' was the probandum. But he maintained that the assertion of the false probans and that of the false probandum did not entail the logical fallacies alleged by the Naiyāyika, since they were only assumed for argument's sake and not independently stated as objective facts. Such assumption is the necessary presupposition of a hypothetical inference adduced as a *reductio ad absurdum*. Vyāsatīrtha maintains that this defence of Jayatīrtha only aims at showing that the Naiyāyika can be defeated even on his own terms. It does not, however, give out the real significance of reasoning and as such the defence should be considered to be inspired rather by a sense of chivalry which would find satisfaction in vanquishing the opponent with his own weapons freely chosen by him.

Vyāsatīrtha now throws off this chivalrous pose and asserts that the charge of the falsity of the minor premise and the conclusion is groundless. Even if we assume that in the reasoning, "If the hill were devoid of fire, it would be devoid of smoke," the probans is negation of fire and the probandum the negation of smoke, as has been asserted by the Naiyāyika and accepted by Jayatīrtha, yet there will be no difficulty on

1 TT. Ms. p. 204.
2 *Ibid.*

the score of the unreality of the minor premise and the conclusion. It has been the complaint of the Naiyāyika that the probans, viz. the negation of fire and the probandum, viz. the negation of smoke, do not actually belong to the subject, viz. the hill and so the minor premise and the conclusion are false. And this is the greatest stumbling-block in the way of reasoning being given the status of inference. Vyāsatīrtha observes in reply that it is not a fact that the probans and the probandum do not stand in relation to the subject. The relation of smoke and fire to the hill is one of conjunction and in the inference of colour from taste, (cf. the mango is possessed of colour, because it is possessed of taste) taste as the probans and colour as the probandum stand to the subject in the relation of inherence. In the inference, again, 'A must be knowable, because it is existent,' the probans 'existence' is related by way of inherence to the subject, but the probandum 'knowability' stands to the subject in the peculiar relation which subsists between a cognition and its object. We may call it cognitive relation (*viṣayatāsambandha*). The Naiyāyika has admitted two kinds of relation: (1) One actual, that is to say, the relation by which the actual incidence of one term in the other is determined (*vṛttiniyāmaka-sambandha*); (2) another which makes us understand that one term is related to another term, though there is no factual incidence of one in the other (*vṛttyaniyāmakasambandha*). Conjunction, inherence and according to some, identity are examples of the former. The jar actually exists on the ground in the relation of conjunction. The examples of inherence between a quality and a substance and so on are matters of common knowledge. The proposition, "A is identical with A" shows that A stands to itself in the relation of identity. Identity has been regarded as a factual relation by some logicians. All these are illustrations of the first kind of relation. But the relation between a subject and an object or between cognition and its content is an example of the second kind. Nobody can deny that they are related, though the factual incidence of the one in the other is not possible. The logical requirements that there must be a true minor premise and a true conclusion, in other words, that the probans and the probandum must stand in relation to the subject, are satisfied irrespectively by both the kinds of relation. If actual relation, such as conjunction, inherence

and the like, were thought to be the prerequisite of inference, a thing could not be inferred to be knowable on the ground of its existence, since the relation between a thing and the quality of being knowable is not inherence. Any kind of relation which makes us understand that the probans and the probandum are related to the subject will suffice to constitute a true minor premise and a true conclusion[1].

Let us now apply the results of our finding to reasoning and see whether a true minor premise and a true conclusion are possible in it. Negation of fire is given as the probans and negation of smoke as the probandum. Do they stand in any relation to the hill? Vyāsatīrtha maintains that there is a relation between the subject on the one hand and the probans and the probandum on the other even in the case under consideration. Negation of fire is asserted by the opponent to be true of the hill and this means that negation of fire stands in the relation of being admitted to be present in the hill. And as regards the probandum, viz. negation of smoke, it is asserted by the arguer as the necessary consequent of the assertion of the negation of fire by the opponent. In other words, negation of smoke is asserted by the arguer as the consequence which is to be admitted by the opponent as a matter of undeniable logical necessity. Negation of smoke as the probandum can thus be said to stand to the hill in the relation of being one to be necessarily admitted by the opponent. Thus, the probans and the probandum are seen to be related to the subject in the example of reasoning cited above, and this is typical of all such cases[2]. The charge of the lack of minor premise and conclusion on the ground of the lack of actual relationship is found to be derived from a hasty generalisation that the relation must be one of actual incidence, which we have shown to be only a small part of the field of relations.

Vyāsatīrtha gives another alternative interpretation. "If the hill be devoid of fire" means "If you admit that the hill is devoid of fire."

1 TT. Ms. p. 206.

2 yadvā āpādakarūpaliṅgasya niragnikatvasya pakṣe parābhyupagatatvam eva pakṣasambandha iti nā'siddhiḥ...liṅgino nirdhūmatvasyā'pi pakṣe abhyupagamanīyatvam eva hi pakṣasambandhaḥ. *Ibid.*

The *admission* of the negation of fire is the probans and this is a true fact, and so there can be no question of the non-existence of the probans in the subject. If the admission were to be repudiated, there would be no occasion for the application of reasoning as *reductio ad absurdum*[1]. The minor premise which is stated in the antecedent clause of the hypothetical proposition, "If the hill be devoid of fire, then it will be devoid of smoke" is true and real and so the objection based upon the unreality of the minor premise is found to be baseless. As regards the charge of the unreality of the probandum, viz. 'the negation of smoke,' which is given in the consequent clause, it will be equally found to be a baseless allegation. The clause 'then it will be devoid of smoke' does not mean to assert that the negation of smoke is actually present in the hill. The meaning of the clause is the assertion that in that case you cannot but admit that the negation of smoke is true of the hill. The hypothetical form of assertion has this very logical implication and it is exactly on a par with the proposition, "If you take poison you will die."[2] What reasoning aims to establish is that the admission of the negation of fire necessarily entails the admission of the negation of smoke. The opponent may decline to admit the consequent, in other words, he may refuse to believe that there is no smoke in the hill. But this refusal does not exempt him from the charge of self-contradiction, since the consequent follows from the ground as a matter of unimpeachable logical necessity. In the light of this interpretation reasoning turns out to be a case of categorical inference. It may be syllogistically propounded as follows: "The hill must be admitted to be devoid of smoke, since it is admitted to be devoid of fire, as for example is the case with a lake."[3] The hypothetical mode of assertion does not, as we have explained before, imply

1 athavā yadi niragnikaḥ syād ity asya yadi niragnikatvāṅgīkāra ity arthaḥ. tathāṅgīkāraś ca siddha eva. anyathā tarkasy'āpy anutthānāt.

TT. Ms. p. 208.

2 evaṃ tarhi nirdhūmaḥ syād ity asya nirdhūmatvenā 'ṅgīkartavya ity arthaḥ. āpādanaṃ hi aṅgīkartavyatayā jñāpanam, na punaḥ sadbhāvapratipādanam. *Ibid.*

3 parvato nirdhūmatvenā'ṅgīkartavyaḥ niragnikatvenā 'ṅgīkṛtatvāt hradavat ity anumānaṃ eva tarka iti sādhanānumāne tarke'pi asiddhyādikaṃ doṣa eva iti na tarkasya sādhanānumānāt vaiṣamyam api. *Ibid.*

that the meaning of the proposition is a tentative possibility. On the contrary this is the usual form of assertion of a necessary and universal relation between two facts.

The difference of the third interpretation from the second consists in the fact that in the latter negation of fire is made the probans and it stands to the hill as the subject in the relation of being asserted to be true. In the third alternative the probans is the *assertion* of the opponent and it has been shown that it is a true fact.[1] In the first interpretation the hypothetical proposition, "If the hill be devoid of fire, it will be devoid of smoke" has been shown to be the statement of necessary concomitance between 'negation of fire' and 'negation of smoke.' The negative proposition, "The hill is not however devoid of smoke," which is the logical culmination of reasoning, furnishes the minor premise. In all these three interpretations the minor premise asserts an objective fact and the conclusion is shown to be a necessary logical consequence. So all the allegations of the Naiyāyika based on the unrealness of the minor premise and the conclusion are proved to be baseless and irresponsible utterances.

There arises one question in this connexion which cannot be ignored. Reasoning has been placed under the head of inference for refutation, which is a different type from categorical inference, which intends to establish a positive conclusion. But, as interpreted here, reasoning has been shown to be on the same footing with categorical inference, since it ends in registering a positive conclusion. This seems to be inconsistent with the classification proposed by the exponents of the Mādhva school of logic. In reply it may be observed that reasoning serves to show the untenability of the assertion of the opponent. There is thus no inconsistency in the fact that reasoning has been classed under inference for refutation. As regards the question of form, we can also show that there is a difference between categorical inference and reasoning in that the probans employed in reasoning is fundamentally different from that of categorical inference as a class. Neither admission is made a probans, nor is it considered to be the relation between the

1 atrā ca dvitīye pakṣe niragnikatvam eva liṅgam abhyupagamas tu tasya pakṣeṇa sambandhaḥ. tṛtīye tu abhyupagama eva liṅgam iti bhedaḥ.

TT. Ms. p. 208.

probans and the subject in categorical inference, as is done in the second and third alternatives. The vindication of reasoning by Jayatīrtha from the charges of the Naiyāyika on the ground that the probans is a matter of assumption, which makes the assumption of the probandum an inescapable consequence and so the charges have no *raison d'etre*, has already been considered by us. It goes without saying that reasoning thus interpreted is to be placed in a different category from categorical inference.[1]

The novelty of Vyāsatīrtha's exposition of the nature of reasoning is undeniable. Of course Vyāsatīrtha gives quotations from Jayatīrtha's writings and these quotations have been shown to adumbrate the alternative interpretations propounded by Vyāsatīrtha. Vyāsatīrtha has no doubt followed up the implications, but the bold formulation of the nature of reasoning in a manner commensurate with the nature of categorical inference in respect of its perfect immunity from the logical fallacies involved in the falsity of the minor premise and the conclusion, cannot but evoke spontaneous admiration for his ingenuity and logical acumen. Jayatīrtha has further pleaded that in assessing the logical validity of reasoning it must not be taken apart from the negative implication, which gives out the true conclusion. But this was not in point of fact an original discovery, since Udayana has shown that reasoning, apart from its negative implication showing the truth of the opposite conclusion, cannot be accepted to record a true finding. Vyāsatīrtha maintains that reasoning as defined and interpreted by him is both formally and materially valid and that again even independently of the negative implication[2]. He, however, defends Jayatīrtha by asserting that Jayatīrtha's insistence on the recognition of the negative implication as a necessary factor of reasoning is due to his realization that reasoning can operate as a *reductio ad absurdum*, only if it culminates in the proof of the opposite conclusion. Vyāsatīrtha submits that reasoning is valid formally and materially in

1 TT. Ms. p. 208.

2 etena viparyayaparyavasānarūpānumānanirapekṣasya tarkasya na prāmāṇyam iti nibandhādau Udayanādyuktaṃ nirastam tannirapekṣasy aiva prasaṅgasya prāmāṇyopapādanāt.

Ibid., p. 210.

itself and apart from the negative conclusion. Reasoning has been defined by him to be, firstly, the valid cognition of necessary concomitance of the negation of the probandum with the negation of the probans and, secondly, to be the valid cognition of the necessity of admission of the negation of the probans entailed by the admission of the negation of the probandum. Though both these cognitions are valid in their own right and independently of the aid of the negative culmination, yet reasoning has to be admitted to be necessarily dependent upon the negative culmination in order to bring home the truth that the hill is not destitute of fire, which was the original thesis, the vindication of which is the ultimate aim and purpose of the application of reasoning.

Vyāsatīrtha's exposition of reasoning leaves no room for doubt that it is to be classed with inference, and as such must be admitted to be a valid logical organ. In the course of our exposition of the speculation of the Nyāya-Vaiśeṣika school on reasoning in the first four chapters, we have demonstrated the difficulty felt by the advocates of these systems, regarding the psychological and logical status of reasoning. The Naiyāyikas have recognised that reasoning could not be placed under the head of doubt or of error, because reasoning is not a case of vacillation between two conflicting alternatives, nor again is it liable to be sublated by subsequent cognition. They also hesitated to place it under valid cognition. Gaṅgeśa thought that reasoning constitutes by itself a species of cognition, which is different from doubt, error, and valid knowledge. It has been sought to be explained as a case of conscious ascription like the ascription of a deity on an image. The image is known to be different from the deity, but still the former is deliberately identified with the latter. This identification is not a case of error, since it is deliberate and the belief in the identity is all along known to be untrue. The Naiyāyika contends that the assertion of the hill to be devoid of fire and consequently of smoke in spite of the awareness of the presence of smoke and fire in it, is the result of an act of conscious superimposition like that of the deity on the image. The identification of a smoking hill with a smokeless hill is certainly false. But it is not an error as it is deliberate. Such an act of cognition may be called

assumption or imaging or ascription or conscious superimposition. Whatever may be the nomenclature, the Naiyāyika is positive that such an act of cognition must not be confounded with valid cognition, which is occasioned by the accredited organs of knowledge. Vyāsatīrtha however maintains that it is nothing short of perversity to deny it the status of valid cognition. The assertion,-"If the hill be devoid of fire, it will be devoid of smoke", has been shown by him to be a legitimate form of assertion of necessary concomitance between two facts. And the hypothetical form is not symptomatic of the hypothetical nature of the cognition. Moreover the attempt to equate it with the act of deliberate identification, which is involved in the case of images of deities, is due to the reluctance of facing an unwelcome situation. Undoubtedly there is deliberate identification of an idol with a deity, but it is occasioned by a profound religious necessity. The contemplation of the deity is facilitated by this identification with the idol and such contemplation is productive of a result of supreme spiritual importance. But no such motive is to be discerned in the case of the smoking hill being identified with a smokeless one[1].

There is again a vital difference. There is no logical connection between the idol and the deity, whereas the necessary concomitance of a fireless entity with a smokeless entity is all that makes possible the realization of the absurdity of the opponent, who believes the presence of smoke to be possible in the absence of fire.[2] This is the motive and objective for the application of reasoning and it can be fulfilled only if there is necessary concomitance between the facts asserted in the hypothetical proposition. The hypothesis of conscious ascription or deliberate identification is entirely irrelevant, since it has no bearing upon the result aimed at, namely, the reduction of the opponent to absurdity. Vyāsatīrtha maintains that reasoning is nothing but a case of inference, since it works by means of the same

1 ...tasya phalānusandhānasāpekṣatvāt vyāptijñānanirapekṣatvāc ca, tarkasya ca phalānusandhānanirapekṣatvāt vyāptijñānasāpekṣatvāc ca.

TT. Ms. p. 213.

2 pratimāyāṃ nārāyaṇadhyānasy eva parvate nirdhūmatvadhyānasyā 'nanubhavāc ca. *Ibid*.

logical apparatus, namely, the universal concomitance and the minor premise, as accredited cases of inference.

Furthermore, reasoning is resorted to with a view to effective rebuttal of doubt. It will be shown when we shall consider the utility and service of reasoning that reasoning succeeds in rebutting a doubt, because there is opposition between them in respect of contents. This opposition of contents shows that it is a logical opposition and reasoning as the vehicle of such logical opposition should be regarded as a logical weapon. The contention of Gaṅgeśa that reasoning is a species of cognition different from the other recognised species is nothing short of sophistry[1]. If the opposition of reasoning to doubt be derived from the class-character they possess, then it will be a case of natural opposition. But in that case Gaṅgeśa will not be able to account for the fact that reasoning rebuts one kind of doubt and not every other. The opposition is, therefore, logical and is based upon the necessary concomitance at bottom. The doubt of the negation of fire in the hill is rebutted by the consideration that negation of fire presupposes negation of smoke as its determinant concomitant, which is however contradicted by the knowledge of the presence of smoke in it. Thus, reasoning only shows that the doubt cannot be entertained, because it has not the sanction of the necessary concomitance at its back and is on the contrary directly opposed by the necessary concomitance between the negation of fire, which he regards as a possibility, and the negation of smoke, which he cannot admit on account of the contradiction involved by the cognition of smoke.

The Utility Of Reasoning

Reasoning is called in request to remove the doubt of the inefficiency of a probans adduced to prove a probandum, in other words, when there is doubt of the necessary concomitance of the probans with the probandum. Now, the doubt about the fallibility of the concomitance between a probans and a probandum may be universal, that is to say, without reference to the particular logical subject under

1 tarkatvasya jātitve tarkasya tvadaṅgīkṛtasaṃśayanivartakatvaṃ na syāt. jñānasya virodhiviṣayakatven aiva tannivartakatvāt.

TT. Ms. p. 215.

consideration[1]. Secondly, the doubt may have specific reference to the subject under consideration though the concomitance of the probans and the probandum may be accepted outside the present context[2]. To take a concrete example. The concomitance of smoke with fire may be doubted as a case of contingent occurrence and so the presence of smoke need not be an instrument of proof of fire as a matter of universal necessity. Now, doubt of the infallibility of necessary concomitance, which is expressed in the major premise, may arise antecedently to the employment of inference, or immediately subsequent to the knowledge of the major premise and minor premise on account of the operation of a conflicting organ of knowledge[3]. The possibility of the latter occurrence makes necessary the admission of the two other fallacies, viz. contradicted probans and countermanded probans in spite of the opposition of the Buddhist logicians. We have already shown in chapter II in the course of the exposition of Bhagīratha Ṭhakkura's view how reasoning facilitates the knowledge of the probandum, that is to say, of the conclusion by removing the obstacle imposed by the operation of a conflicting organ of knowledge. We are already familiar with the objections of Śrīvallabha to the possibility of doubt subsequent to the knowledge of the major premise and the minor premise. We have seen how Bhagīratha and Rucidatta defend the possibility of such doubt and how reasoning is of service in the elimination of the obstruction.

Vyāsatīrtha admits the possibility of the two kinds of doubt, antecedent and consequent to the knowledge of the premises. He holds that these two types of doubt are at bottom concerned with the necessity of the universal concomitance. The doubt is to the effect

1 ...tarkanivarttyāprayojakatvaśaṅkā hi dvedhā pakṣataditarasādhāraṇyena sadhūmo'pi kaścin niragniko'stv iti vā.

TT. Ms. p. 216.

2 pakṣād anyatra niyame'pi pakṣe samabalasya prabalasya vā sādhyābhāvapramāṇasyā'bhimānena pakṣa eva sadhūmo'pi niragniko'stv iti vā.

Ibid., p. 217.

3 tatra ādyā vyabhicāraśaṅkārūpā liṅgaparāmarśāt prācinā. dvitiyā tu pratipramāṇaśaṅkārūpā, tasmād arvācinā.

Ibid.

that the concomitance of the two terms used as the probans and the probandum is contingent and accidental. This doubt of the contingency of concomitance is removed by reasoning, which shows that the concomitance is necessary and universal, because the probans in question is impossible without the necessary accompaniment of the probandum. Reasoning is classified by Vyāsatīrtha under two heads in conformity with the twofold division of doubt, antecedent and consequent to the knowledge of the premises. Reasoning, which eliminates the doubt of universal concomitance, is instrumental to the formulation of the major premise, which is regarded as the organ of inference (*anumitikaraṇaniṣpādaka*). The second type of reasoning, which removes the doubt arising subsequently to the knowledge of the premises, directly helps the realization of the conclusion[1]. Vyāsatīrtha thus admits the two conventional types of reasoning, viz. (1) one conducive to the knowledge of the universal proposition (*vyāptigrāhaka*) and (2) the other conducive to the knowledge of the conclusion (*viṣayapariśodhaka*) by removing obstruction caused by doubt in each case. Reasoning in this twofold rôle acts as an auxiliary to inference. But the rôle of reasoning as an independent organ as shown before is also admitted. We have shown in our exposition of Jayatīrtha's discourse on reasoning, that reasoning, whether it acts as an auxiliary or as an independent organ, never forfeits its status as an independent organ, and Vyāsatīrtha has endorsed this position in his work[2].

We have expounded the nature of reasoning and the service it renders in the light of the exposition of Vyāsatīrtha. We now propose to consider Vyāsatīrtha's criticism of the exposition of the nature of service rendered by reasoning according to the Naiyāyikas. Vyāsatīrtha maintains that if reasoning be regarded as a case of assumption or false ascription, as has been done by the Naiyāyikas, it cannot be supposed to make any contribution either to the realization of the

1 nivarttyabhedāt nivartakas tarko'pi dvedhā tatr'ādyo'numitikaraṇaniṣpādakaḥ, dvitīyas tu niṣpannena karaṇena pratipramāṇaśaṅkānirāsārtham apekṣitatvena phalopakārakatvād anumānānugrāhakaḥ.

TT. Ms. p. 218.

2 *Ibid.*, p. 219.

conclusion or to that of the necessary concomitance. Reasoning as we have repeatedly shown works as a *reductio ad absurdum*, because it is based upon necessary concomitance. The denial of fire in a smoking hill is shown to involve absurdity, because smoke is concomitant with fire and consequently the denial of fire would involve the denial of smoke, which is directly contradicted by the perception of smoke in the hill. That the denial of fire involves the denial of smoke is due to the fact that negation of fire is necessarily concomitant with the negation of smoke. If, however, the denial of fire were of the nature of an assumption and a make-believe and so also were the denial of smoke, it passes our understanding how the pretended denial of fire would be incompatible with the presence of smoke.[1] This is the fundamental weakness of the Naiyāyika's position and infects all their speculations on the utility of reasoning with an air of unreality and make-believe. Vyāsatīrtha has taken up the different views of the utility of reasoning, (1) that it serves to prove the untenability of the opponent's position, (2) or to rebut the doubt of the possibility of the opposite conclusion, (3) or to preclude enquiry after the opposite possibility, which have been already examined by us in all their details in the first four chapters dealing with the position of the Nyāya-Vaiśeṣika school of philosophy. The objections that have been levelled by Vyāsatīrtha against these views have already been anticipated by these philosophers and they have given suitable replies. It will serve no purpose to dwell upon these arguments, which are only summed up by Vyāsatīrtha. It must be recognised that Vyāsatīrtha's definition of reasoning and his exposition of its nature and service really register a high water-mark in the logical speculations of India and they ought to be accepted as a distinct improvement upon the theories of the Nyāya-Vaiśeṣika school.

1 ... pramāṇaviruddhanirdhūmatvāpādakatayā niragnikatvam evā 'niṣṭam, na tu tajjñānaṃ tasyāroparūpatvena tadanāpādakatvāt.

TT. Ms. p. 225.

CHAPTER VIII

THE JAINA CONCEPTION OF REASONING

The Jaina logician regards reasoning as the organ of cognition of universal and necessary concomitance between two terms. It is an entirely different species of cognition which can be subsumed neither under perception, nor inference, nor any other kind of knowledge. The condition of such cognition is observation and non-observation of the co-occurrence of two terms. The form in which it delivers itself is as follows: "A occurs only and necessarily when B occurs, and is not seen to occur as a matter of universal necessity when B is absent." The content of this cognition is the universal and necessary relation between two terms e.g. A and B.[1] It is not however to be contended that what is called the resultant cognition is nothing different from what has been laid down as the condition of it. It has been asserted that observation and non-observation of two terms as two co-occurrent events is the condition of the knowledge of the universal concomitance of two terms. But the supposed two cognitions, the so-called condition and the result are identical both in respect of form and matter, since the observation of two terms in association together with the non-observation of one term in the absence of the other is equivalent to the cognition of necessary relation between the two. The Jaina however maintains that mere observation of co-presence of terms or non-observation of them out of relation, cannot give insight into the universality and necessity of their relation. Observation and non-observation are nothing but cases of perceptual cognition. And as such their jurisdiction is limited to present individual data. But reasoning is a mental act, which though it arises from the perceptual cognition of the present data, has jurisdiction over past, present and future, and as such it is a different type of cognition both in respect of form as well as matter. It is a fact that inference is possible if there is knowledge of universal

1 upalambhā'nupalambhasambhavaṃ trikālīkalitasādhyasādhanasambandhā-dyālambanam idam asmin saty eva bhavatī'ty ākāraṃ saṃvedanam ūhāparanāmā tarka iti.

PNT, III. 7, p. 500.

and necessary concomitance at its back. It is also equally an undeniable fact that perception is necessarily limited to present data, and as such is incompetent to have commerce with past, future and remote occurrences. However much the sceptic may decry the validity of inference as an organ, the very possibility of the theoretical and practical activity of our life presupposes the infallibility of inference. It must therefore be admitted that the knowledge of universal concomitance is possible. And it is for the acquisition of such knowledge that reasoning has been postulated by the Jainas as the organ for the same.

A question has been raised that an organ of knowledge must bear a definite relation to the object which it is supposed to cognise. Now it is a universal rule that in cognition other than perceptual, the cognition of the relation between it and the object is a necessary pre-condition of the cognition of the object. Thus, in inference cognition of smoke is the ground of the cognition of fire, only because it is preceded or accompanied by the cognition of the necessary relation between the probans and the probandum, as for example smoke and fire. In verbal cognition also where a word denotes a fact which is its meaning the cognition of the relation between word and meaning is the necessary antecedent condition of the same. Reasoning is considered to be a species of cognition, which is different and distinct from perceptual cognition. Accordingly, in conformity with the rule formulated above it can eventuate in the cognition of its object, namely, universal concomitance, provided the relation between reasoning on the one hand and the universal concomitance on the other is cognised before. But what will be the organ of such cognition? For aught we know it cannot be perception, since it is rigidly delimited to present data and universal concomitance is *ex hypothesi* thought to extend beyond all limitations of time and space.[1] Nor can the knowledge of this relation be secured through the good offices of inference, since the latter invariably depends upon the knowledge of the universal concomitance, and if the knowledge of the relation between universal concomitance and reasoning

1 ... kutas tatsambandhapratipattiḥ? na tāvat pratyakṣāt, tasya tadaviṣayatvāt. SVR, p. 503.

were to be secured by it, it would presuppose another reasoning, and the latter again another inference for the cognition of the relation with universal concomitance, and this inference would again require another reasoning and there will be no end of the process.[1] Nor can it be supposed that a second reasoning will be of help for the cognition of the relation between the first reasoning and its object, namely, universal concomitance. The second reasoning will be in the same position as the first and so it will be as ineffectual as the first being subject to the same limitation. Nor again can any other organ of knowledge be appealed to for the resolution of the *impasse*, since being different from perceptual cognition, it too will presuppose the cognition of the relation between itself and its object.[2]

The Jaina replies to this objection by denying the reality of the problem based upon the universal rule that non-perceptual cognition can operate only by being preceded by cognition of the relation between the said cognition and its object. The Jaina thinks that this universal rule is based upon a hasty generalization and not upon comprehensive knowledge. The opponent has made a reservation in the case of perceptual cognition and what is the reason of it? It is nothing but the recognition of the brute fact that perceptual cognition takes place without the mediation of any other cognition. The laws of nature, whether physical, or psychological, or logical, can be derived only from our knowledge of things and their behaviour. And this has been the reason why the Naiyāyika has been constrained to exclude perceptual cognition from the province of this law. The same is the case with reasoning. That it is different from perceptual cognition does not impose a disability upon it, nor again perceptual cognition because of its difference from non-perceptual cognition is entitled to a prerogative, which cannot be shared with others[3]. It is merely a question of fact and not of reason that a particular species of cognition is preceded by cognition of the relation that obtains between itself and its object. Reasoning is certainly the organ of

1 nāpy anumānāt, anavasthānuṣaṅgāt.
SVR, p. 503.

2 *Ibid.*

3 *Ibid.*

cognition of universal concomitance and it is undeniable that there must be a relation between this organ and its object. But as has been observed, reasoning, that is set into activity by observation and non-observation of two particular cases of concomitance, does not stand in need of the cognition of the relation between itself and its datum as the antecedent condition, and directly delivers the cognition of the universal concomitance by its inherent and necessary power. And so the problem does not arise at all.[1]

But a really formidable objection has to be encountered. Reasoning can be regarded as an organ of knowledge only if it can establish its claim to deliver the knowledge of an objectively existent fact. It has been claimed that universal concomitance is the object of reasoning. But what can be the nature of universal concomitance? Does it mean the necessary co-presence of two terms in an identical area of space, or in a determinate period of time, or in both[2]? It will transpire on examination that neither of these alternatives is a tenable supposition. Firstly, spatial co-presence is not found between smoke and fire. The volume of smoke is found to wander in the firmament, whereas fire is present in a particular part of the hill. There is again supposed to be a necessary connexion between rainfall and flood. But rainfall has occurred in the upper region and the flood is found in the lower region of the river, and so there is no spatial co-presence between these two events also. Yet it is supposed that these sets of occurrences are necessarily connected[3]. As regards temporal co-presence, that also is not a necessary element of the supposed universal concomitance. Thus there is no temporal concomitance between flood and rainfall, since there was no flood when there was rainfall, and there is no rainfall when there is flood. Again the rise of

1 tarkasyā 'pi svayogyatāviśeṣasāmarthyād eva svaviṣayapratyāyanasiddhir bhavatu.

SVR, p. 503.

2 tarkasya ca viṣayo vyāptilakṣaṇaḥ pratijñāyate...vyāptiś ca vicāryamāṇā 'nāvasthāṃ badhnāti. yataḥ sādhyasādhanayoḥ sambandho vyāptiḥ. sambandhaś caikadeśatvam ekakālatvaṃ vā tayor bhavet ?

Ibid., p. 504.

3 *Ibid.*

the star called *Kṛttikā* is supposed to be the ground of inference of the rise of *Rohiṇī*[1]. But they are not synchronous events as the latter occurs after the former[2].

It has been found that the so-called universal concomitance cannot be determined either as spatial or as temporal co-presence, which are the only possible ways in which necessary relation can be understood. Let us now consider the nature of the terms between which this relation can be supposed to hold. Suppose, in the first place, that the universal concomitance subsists between one universal and another universal. Or, in the second place, that it subsists between a universal and its particulars. Or, in the third place, that it subsists between the particulars and the universal. Or, in the fourth place, that it subsists between particulars and particulars[3]. The first alternative is not a tenable hypothesis, since the concomitance between the universals is not conducive to the interests of inference. The object of inference, that is the major term is an individual and not a universal. Thus, for example, the fire which is sought to be inferred on the ground of smoke is a concrete individual and not the fire-universal. Besides universals are regarded as ubiquitous principles, and as such the cognition of the presence of a particular universal in a particular place will be a superfluity, inasmuch as fire-universal, for example, exists everywhere, both in the hill and outside the hill. And so what will be gained by proving the presence of fire-universal in a particular hill by inference[4]?

The second alternative also does not stand in a better position. Is the relation of the universal with the particulars to be supposed to

1 *Kṛttikā*. The pleiades. The third of the 27 lunar mansions or asterisms (consisting of six stars). *Rohiṇī*. Name of the fourth lunar mansion (containing five stars) figured by a cart. PSED, pp. 371, 807.

2 SVR, p. 505.

3 kiṃ ca kasya kenā'yam avinābhāvaḥ? kiṃ sāmānyasya sāmānyena, sāmānyasya viśeṣaiḥ, viśeṣāṇāṃ sāmānyena, viśeṣāṇām viśeṣair vā?

Ibid.

4 na prathamapakṣaḥ. yato na sāmānyasya sāmānyena vyāptir anumānāṅgam...tasya ca nityatvavibhutvābhyām sakaladeśakālasambandhitayā suprasiddhasya sādhane siddhasādhyatā syāt. *Ibid.*

obtain between the universal on the one hand and the particulars on the other, undetermined by space and time, or definite particulars determined by space and time[1]? The former supposition does not give any advantage or a new information, since it is much too well-known that universals are embodied in their particulars. The inferable predicate, that is the major term, is a definite individual and a concrete real, and so the knowledge of the mere possibility of the presence of fire-universal embodied in some unknown individual, does not add to our knowledge, for everybody is aware that a universal is related to its particulars[2]. But the very fact that a universal can exist independently of particulars in its disembodied form takes away all the point from this hypothesis. What the arguer is interested to prove by inference is not the presence of the pure universal or of the universal embodied in an indefinite individual, but of a definite particular individual. If in the alternative it is supposed that the relation of the universal is with the definite individuals existing in time and place, which are exclusively their own, that will be in direct contradiction with facts. The relation of a universal with a particular individual is as particularistic and contingent as the particulars are. Thus, there is no necessary concomitance between smoke-universal and the individual fire existing in the hill, since it is found that the hill-fire is not present in the kitchen, though smoke-universal is found therein[3].

The third alternative is in the same position with the second, since the particulars are always contingent to the universal whereas the universal is equally present in different particulars. Thus it is found that the relation between a probans and a probandum is not one between two universals, nor between a universal and particulars,

1 dvitīyapakṣe'pi deśakālābhyām anavacchinnair viśeṣaiḥ sāmānyasy' āvinābhāvo'vacchinnair vā?,

SVR, p. 505.

2 yady anavacchinnaiḥ, tadā siddhasādhyataiva.

Ibid.

3 atha deśakālāvacchinnaiḥ, tadā' nugamābhāvaḥ. na hi dhūmasāmānyasya parvatādisthair agniviśeṣair anugamo'sti, tasya tadantareṇā' pi pākapradeśādāv upalambhāt.

Ibid.

nor *vice versa*. The reason is, in the first place, that the object of inference is always a definite concrete individual and not a universal, which is *ex hypothesi* known to be present at all times and at all places, and so the proof of this fact will be proof of what is obvious and undisputed. The second and third alternatives are scouted on the ground that the relation between a universal and particulars, and conversely of particulars with a universal, is always vitiated by a contingency, since no particular can either restrict or exhaust the incidence of the universal in it. Besides, the possibility of the existence of universals, pure and simple, independently of embodiment in a particular, robs these hypotheses of all their practical value[1].

As regards the fourth hypothesis, that the universal concomitance subsists between two sets of particulars, it will be found on examination to be tantamount to either a counsel of perfection, or a counsel of despair. Certainly it is impossible to determine the necessary relation between all individual smokes and all individual fires, since their number is literally infinite and our resources are hopelessly unequal to the task[2].

Again, the proof of the positive concomitance is supposed to be furnished by the truth of the negative concomitance between the opposites. Thus, for instance, smoke and fire are supposed to be necessarily related as determinate and determinant concomitant, and the corroboration of this belief is thought to be found in the necessary concomitance of the negation of the determinant concomitant with the negation of the determinate. The absence of fire is supposed to entail the absence of smoke. But does the absence of one particular fire entail the absence of all individual smokes ? This is not the case. The absence of the fire-in-the-hill does not entail absence of the smoke-in-the-kitchen, and the fire-in-the-kitchen that is present is numerically different from the fire-in-the-hill. So it must be admitted that

1 SVR, p. 505.

2 viśeṣāṇām viśeṣair iti turīyapakṣe'pi duḥśakam avinābhāvagrahaṇam. teṣām ānantyāt.

Ibid.

the negative concomitance between the absence of fire and the absence of smoke can be held to be valid if the absence of all fires entails the absence of all smokes. But even if this be possible it is never within the range of human knowledge which is circumscribed by definite limitations. It is therefore a counsel of perfection which can never be realized, and if it is offered in full consciousness of this impossibility, it turns out to be a counsel of despair[1].

Furthermore, the negative concomitance is supposed to be founded upon the inherent opposition between the absence of the probandum and the presence of the probans. Thus, for instance, the absence of fire is supposed to entail the absence of smoke, because the absence of fire is supposed to be incompatible with the presence of smoke or *vice versa*. But on scrutiny it will be found that the opposition of smoke is with the absence of smoke and not with the absence of fire. Thus, it is found that in the burning charcoal which is completely dehydrated, there is found absence of smoke and this shows that the opposition of smoke is with the absence of smoke and not with the absence of fire, since the absence of absence of fire, that is, the presence of fire, is found to exist in harmony with the absence of smoke[2]. Moreover though it is conceded that there is necessary concomitance between the reddish colour of the fire and smoke, yet smoke is never used as the ground of inference of the colour. Likewise smoke is considered to be the probans of fire and not the darkness of the colour of the former. So it is an arbitrary assertion that smoke is the concomitant of fire and not the colour of them. The concept of necessary and universal concomitance is thus bound to be dismissed as an arbitrary and capricious figment of the logician's imagination, and the dismissal of universal concomitance as a pious hope and consummation bound to remain ever unrealized, knocks down *a fortiori* the claim of reasoning as an organ of this chimera[3].

The Jaina in reply to this formidable array of objections observes

1 SVR, p. 505.

2 tad iha dhūmābhāva eva sati dhūmasya nivṛttir dṛśyata iti dhūmābhāvenaiv' āsya virodho na tv agnyabhāvena. *Ibid.*

3 *Ibid.*, pp. 505-6.

that the alleged difficulties proceed from a perverted misconstruction of the data of experience, and the failure to distinguish between essential characteristics and unessential accidents. The relation of necessary concomitance holds between two terms in their essential character. That one term is related to the other is due to the fact that the essential nature of one necessarily involves or presupposes that of the other[1]. Thus, for example, the essential nature of smoke is what is called smokehood, in other words, what makes a smoke smoke. The essential nature of fire is likewise what is called firehood, in other words, what makes a fire fire. Fire and smoke will not be themselves minus what is called firehood and smokehood respectively. And the relation of necessary concomitance has its foundation and basis upon this essential nature of things, and time and space or any other phenomena that happen to be associated with them are absolutely irrelevant accidents without the least bearing upon the relation in question. So the objections based upon temporal and spatial concomitance are incoherent prattle. The necessary concomitance holds between fire as such and smoke as such without reference to time and place, which, though they are the unavoidable setting in which the individual fire and smoke manifest themselves, are nothing but external determinations[2].

As regards the difficulties raised regarding the nature of the terms as to whether they are particulars or universals, these are the creations of abstractionistic tendency of logical thought. The Jaina does not believe in the existence of pure universals or pure particulars, which are the fictions of abstract logic, however necessary and convenient they may prove to be for logical thinking[3]. The dichotomy between universal and particular is false. And so the objections based on these abstractions of logic will not cut ice with philosophers, who will

1 svarūpaprayuktasyā 'vyabhicārasya vyāptitvapratijñānāt.

SVR, p. 506.

2 deśakālau parihṛtya svarūpamātreṇai va dhūmāder agnyādinā sahā 'vinābhāvasya nirbādhabodhābhirūḍhatvāt.

Ibid.

3 na ca kevalau sāmānyaviśeṣau gamyagamakarūpatayā'nubhūyete.

Ibid.

verify their speculations by observation of objective data. It may however be asked between whom then the necessary concomitance can hold good. The answer is that it holds between two reals, which are by their very constitution inseparable from each other[1]. Reals are neither universals nor particulars, but constitute a third type, which is distinct from both of them severally and jointly. And it is between two such reals, which may be characterised as concrete and individuated universals, that the relation of necessary concomitance can hold good. As regards the question, "Between what two reals does necessary concomitance hold good as a matter of intrinsic necessity?" it can be determined by reasoning, which is set into activity by observation and non-observation of concomitance between two individual facts, as we have elucidated at the outset of this chapter.

As regards the question whether negative concomitance holds between a particular and a particular, or between one particular and all particulars, our answer is that it subsists between two reals taken in their universal reference. Thus the absence of smoke is concomitant with the absence of fire as such, that is to say, with the absence of all individual fires. The relation is cognised between negation of the whole class of fire and the negation of the whole class of smoke, that is to say, between the absence of all smokes and the absence of all fires[2]. And in this apprehension of the negative concomitance no reference to the spatio-temporal setting, in which they may actually occur, enters as an element. But it has been asked, how can the absence of all fires and all smokes be apprehended without apprehension of the negata, that is, all the individual fires and all the individual smokes? And the apprehension of all individual smokes and all individual fires is not possible to ordinary human beings destitute of omniscience. The Jaina answers that the matter is not so recondite

1 tatra yasya yenā 'vyabhicāras tasya tenā 'vinābhāvaḥ.
SVR, p. 506.

2 yad api kim ekasya kasyacid agner abhāve dhūmānupapattir gṛhyate sarvasya ve' tyādy upanyastam, tatra sarvasye' ti brūmaḥ. yato dhūmānupapattiḥ sarvākṣepeṇa pratīyate yāvān kaścid dhūmaḥ sa sarvaḥ sarvasyā 'gner abhāve'-nupapanna iti.
Ibid.

as it has been made out to be. The difficulty proceeds from the misconception of the nature of negation. Negation is not an abstract non-entity, but a positive entity. Thus by the negation of fire we should not understand an ethereal abstraction having no local habitation of its own. It is, on the contrary, nothing but the positive locus different from the locus of fire[1]. Negation of one entity is always another entity. Thus the negation of fire is a locale in which all fires are *non est*, such for instance as a lake. The apprehension of the lake, together with the recognition of the fact that fire is not present in it, is equivalent to the apprehension of the negation of fire. It is not necessary that the knowledge of all the negata should precede the knowledge of the negation. That this is the fact is proved in the apprehension of individual entities, which is a commonplace occurrence. Let us illustrate this truth by the examination of the apprehension of a particular entity, say, a jar. The jar is felt as jar and this means that it is felt as distinct and different from all the infinite number of things which are not jars. And this is in entire conformity with the view propounded before that the reals are neither universals nor particulars in the state of divorce, but constitute a third type which embodies both the elements and at the same time is different from either. Thus to know a jar is not only to know a positive existent, but also to know the negative element in it, which is responsible for the distinctive individuality of it. The contention, therefore, that to know a thing negatively, that is to say, as distinct and different from all that is other than it, presupposes the knowledge of the infinite number of existents from which it is different, is an illustration of the absurdities to which love of abstract logical speculations may lead. The admission of the necessity of the condition alleged would on the contrary make all our knowledge of individual facts as individuals impossible. We have shown how an individual may be known as different from the infinite number of individuals without the knowledge of the specific individuals standing in opposition. And the knowledge of the negation of fire is nothing but the knowledge of an entity which is bereft

1 yato'gnyabhāvas tadanyadeśādisvabhāvo bhāvāntarasvabhāvatvād abhāvasya. SVR, p. 507.

of fire and for this the knowledge of the infinite number of fires is not necessary[1].

As regards the contention that there is no opposition between the absence of smoke and the presence of fire, but it holds between the presence of smoke and the absence of smoke, it will suffice to say that it (the contention) is based upon insufficient observation of data. That one thing is opposed to another thing cannot be determined *a priori*, at any rate in all cases. Without entering into the epistemological controversy that the opposition of smoke and not-smoke is known *a priori*, the condition of the knowledge of opposition can be formulated in conformity with the testimony of experience as follows. B is opposed to A, if the presence of A invariably entails the absence of B. Thus the relation of opposition is known from experience to subsist between two terms when the presence of one is inevitably attended with the absence of the other[2]. It is of course observed that if there be not-smoke in a place, smoke will not be perceived to be present in it. So smoke and not-smoke are to be understood as mutually opposed. But this is not the only possible case of opposition. There is another fact which is found to stand in opposition to smoke, for instance, absence of fire. It is invariably observed that if there be absence of fire, there is absence of smoke. Smoke cannot possibly exist in a place where fire is non-existent. So the opposition of smoke is found to hold not only with negation of smoke, but also with negation of fire. Thus we find that there is not only positive concomitance between smoke and fire, but also the negative concomitance between negation of fire and negation of smoke. The opponent's objection is therefore found to be absolutely baseless.

As regards the objection that there is necessary concomitance between smoke and the colour of the fire and still one is not made the ground of inference of the other, it will be found to be based upon a hasty and unreal assumption. The relation of necessary concomitance is understood between fire and smoke in respect of their essential

1 SVR, p. 507.

2 ... yatsadbhāve yasya niyamena nivṛttis tena tad viruddham eva. agnyabhāve ca sati dhūmasya niyamena nivarttamānatvād dhūmābhāven eva tenā' pi tasya virodhaḥ. *Ibid*.

character and not of colour and the like, because the qualities in question are not the essential characteristics of them[1]. Thus the yellowish colour of fire is found to be present in gold also; its brilliance in a flash of lightning; the quality of existence is found in all entities; and its burning capacity is also found in the sun; its upward motion is found also in the wind; its capacity to melt ice is found in hot oil. Thus all these qualities of fire are contingent and variable. Similarly also the dark colour and other attributes of the smoke are not essential characteristics. A buffalo may be as dark as the smoke; its irritating effect on the eyes is also found to belong to oil; its upward rise in the sky is found to be present in vapour[2]. So these qualities are not uncommon and peculiar characteristics of smoke or of fire. The necessary and universal concomitance is determined only by those qualities, which are known to constitute the essential nature of the things, e.g, smoke and fire. There need be no difficulty to apprehend what is an essential and what is an unessential attribute. The essential attribute is the connotation of a term without the knowledge of which the entity denoted by the term cannot be understood. The essential attributes of smoke and fire are therefore those, the knowledge of which is the pre-condition of the knowledge of smoke as smoke and fire as fire. Such attributes are called, for want of better and more expressive terms, smokehood and firehood. The qualities which as specified above are found to belong to other substances, can by no means enter into the constitution of the essential nature of things, and so the objection based upon the supposition that these qualities are the terms of necessary concomitance falls to the ground with the collapse of the foundation on which it is based[3].

1 ... yato vyāptyanusāreṇā'numānaṃ vidhiyate. vyāptiś ca agnitvadhūmatvadvāren aiv'āvasīyate. na paiṅgalyādidharmadvāreṇa. teṣām ānantyād vyabhicārāc ca. SVR, p. 507.

2 *Ibid.*

3 ato yen aiva rūpeṇa viśvavivaravarttinyo vahnivyaktayo dhūmavyaktayaś ca saṃgṛhyante tad eva rūpaṃ vyāptiṃ niyamena vyavasthāpayati. tac cā 'gnitvadhūmatve muktvā nā' nyad bhavitum arhati. na khalu yathā vastvantarasādhāraṇaḥ paiṅgalyādayas tathā 'gnitvadhūmatve. *Ibid.*, p. 508.

But it may be asked that if there is necessary concomitance between smoke and fire, why is it that smoke and fire were not understood to stand in this relation, when they were severally or jointly perceived for the first time. The answer is that the relevant organ was not in operation. The absence of the organ is due to the absence of the conditions of it. And we have already set forth the conditions as observation and non-observation of co-presence and these conditions were not certainly present at the time of the first perception. The failure of the cognition does not imply the absence of the necessary concomitance, since it is due to the non-emergence of the relevant organ, namely, reasoning[1].

To sum up the Jaina position. Reasoning is a separate organ of cognition and its content is universal concomitance. The conditions of reasoning are observation and non-observation of the co-occurrence of two terms-in one word the Joint Method as called by Mill.

THE NAIYĀYIKA'S OBJECTION REFUTED

The Naiyāyikas hold that reasoning cannot be an organ of knowledge, since it has no object of its own. The object of reasoning is held by the Jaina to be universal concomitance. But it is the object exclusively of perceptual cognition. Even the first perceptual cognition is competent to take note of the universal and necessary concomitance of smoke with fire. It is not possible that there should arise the doubt whether smoke is the effect of fire, or of any other entity, such as water. Nor is there any ground for mistaking it to be the effect of anything other than fire. The perceptual cognition of the co-presence of smoke and fire is the sufficient warrant that smoke is the necessary concomitant of fire. The repeated observation of concomitance in presence and in absence only serves to place the finding of first perception on a footing of security. The subsequent observation does not add an iota

1 nanu yady anayor vyāptir asti tarhi prathamadarśanakāle kasmān no 'llikhati 'ti cet, grāhakābhāvād iti brūmaḥ...vyāptijñānasya hi kāraṇam upalambhānupalambhau, na ca prathamadarśanakāle tau staḥ. SVR, p. 508.

to the content of the perceptual cognition[1]. The Naiyāyika also offers an alternative explanation. The organ of cognition of universal concomitance is perception aided by the repeated observation of concomitance in presence and in absence[2]. It will therefore be no sound objection to urge why this necessary concomitance is not cognised at the time of the initial perception. The answer is that the full condition of the perception of necessary concomitance is the Joint Method, and this cannot possibly come into being at the time of the initial perception[3]. The repeated observation of concomitance in presence and in absence serves to rebut all doubt about the determinant of necessary concomitance. Even though smoke and fire are found to be co-present, there may legitimately arise the doubt whether the necessary concomitance of fire is determined by smoke as such or by such qualities of smoke as dark colour, etc. This doubt is resolved by the consideration that the qualities of smoke, such as dark colour, etc., are invariably the accompaniment of smoke alone and have no reference to fire[4]. That smoke as such, that is to say, smoke as determined by smokehood, is the necessary concomitant of fire, is definitely ascertained by the repeated observation of concomitance in presence and in absence. The cognition of concomitance as necessary and universal is felt to be direct and intuitional in character, just like the perceptual cognition of a man bearing a staff. The cognition of necessary concomitance is no doubt a judgment, cognisant as it is of two terms and

1 ... tarkaḥ pramāṇaṃ na bhavati nirviṣayatvāt...tarkasya hi viṣayaḥ sādhyasādhanayor vyāptiḥ paraiḥ pratipādyate. sā ca pratyakṣasy aiva viṣayaḥ, prathamapratyakṣe'py agnisambandhitvena dhūmasya pratibhāsanāt. na cā 'yaṃ dhūmo vahner anyato'py anyasmād eva vā jalāder bhavatī 'ti sandehaviparyāsau pratyakṣe sambhavataḥ. SVR, p. 509.

2 bhūyo darśanādarśanāvagatānvayavyatirekasahakṛtena vā pratyakṣeṇa vyāptiḥ pratīyate. *Ibid.*

3 anvayavyatirekābhyāṃ hi bhūyodarśanādarśanāvagatābhyāṃ vyāptir ullikhyate. na ca prathamapratyakṣakāle tau staḥ. *Ibid.*

4 kiṃ dhūmaprayukto'yaṃ niyamaḥ kiṃ vā śyāmatvādiprayukta iti. tatra śyāmatvādayo dhūmāpekṣā na vahnisāpekṣā iti dhūmasyā 'gnisambandhitve dhūmatvam eva prayojakaṃ na tu śyāmatvādayaḥ. dhūmatve hi sati na kadācid agnitvaṃ vyabhicaratī 'ti. *Ibid.*

the relation holding between them. But the judgment is as perceptual as the judgment of the man with the staff[1]. It should therefore be held that the organ of necessary concomitance is the instrument of perception and not reasoning as advocated by the Jainas.

The Jaina reply

As regards the objection that reasoning has no object of its own, since universal concomitance, which is claimed to be the object of reasoning, falls within the ken of perception, it will be found on enquiry to be devoid of substance. Perception whether sensuous or mental cannot be competent to get hold of universal concomitance, which holds not only between present terms, but has reference to past, future and even remote objects, which can never be supposed to come within the range of perception[2]. Perception is by the very nature of it necessarily limited to things, which exist at the present moment and which become related to the sense-organ. It is preposterous to suppose that perception, or the sense-organ in question, can come into relation with what has become defunct and what is yet not in existence. It is equally an idle supposition that the sense-organ, or its result sense-perception comes into a sort of transcendent relation with the infinite number of individuals, once existent and not yet existent, through the medium of the universal which is cognised in the individual object. We have discussed the possibility and the character of such perception at the very commencement of chapter i. It ought to be remarked here that the Naiyāyika's theory of transcendent perception of objects, even defunct and unborn and situated beyond the ken of sense operation, has been repudiated by the Mīmāṃsist, the Vedāntist, the Buddhist and the Jaina philosophers. These philosophers would fain account for these cognitions by means of inference. The inference will be like this.

1 bhūyodṛṣṭānvayavyatirekasya pramātur aparokṣākāratayo 'pajāyamānatvād viśiṣṭadaṇḍyādipratyayavat pratyakṣam eve 'daṃ vyāptijñānam iti.

SVR, p. 509.

2 ...na ca tatre' ndriyasya grahaṇasāmarthyaṃ sambhavati. sakalavyāpyavyāpakavyaktibhiḥ sārdhaṃ tasya sambandhāsambhavāt.

Ibid., p. 510.

"The past, future and present unperceived coins are like the coin that is under observation, because they belong to the self-same class, and hence possess the same class-character as the present one". And even if it is admitted that the cognition of one individual carries with it the cognition of all the individuals belonging to the same class, yet the knowledge of relation that holds between two heterogeneous individuals cannot be cognised as necessary and universal in reliance on the verdict of perception, transcendent or non-transcendent. Thus the mere perception of a horse in the stable, even though it be repeated for a hundred times, cannot give us the assurance, even by virtue of its transcendent capacity credited to it by the Naiyāyikas, that the connexion of the horse with the stable is necessary and universal. So something more is needed for the acquisition of the knowledge called induction. It must therefore be admitted that perception, whether ordinary or extra-ordinary, is incompetent to give insight into necessary and universal concomitance, that holds between two classes of facts. The contention of the Naiyāyika cannot therefore be accepted as a satisfactory explanation of inductive judgment[1].

Let us consider the alternative explanation offered by the Naiyāyika, namely, that though pure perception be incompetent to realise necessary relation, the same aided and reinforced by repeated observation of the concomitance of individuals of a class in presence and in absence, is an efficient organ of the same. But the hypothesis of reinforcement, however plausible it may appear, cannot be supposed to have any special bearing upon the problem. However much an entity may be assisted by a number of auxiliaries, it cannot be supposed that the auxiliaries in question will confer upon it a capacity which it does not possess independently and on its own account. Thus the visual organ, though aided by a powerful light, cannot come to acquire the capacity for perceiving taste or odour[2]. The light can only facilitate the perception of colour for which the visual organ is competent *per se*. So the repeated observation of concomitance in agreement and in

1 SVR, pp. 510-11.

2 na khalu pradīpasahakṛtaṃ locanaṃ rasādau pravarttamānaṃ pratīyate. *Ibid.*, p. 511.

difference, if viewed as the ally and auxiliary of perception, can be of help to it only in the realisation of what it is competent for. But we have seen that perception is incompetent with regard to things and their relation, which stand outside its purview.

Nor can the cognition of universal concomitance be regarded as a sort of mental intuition. It is a truism that the mind taken by itself is incompetent to perceive external objects[1]. Its jurisdiction is entirely limited to only such mental phenomena as feeling, willing or knowing. It must be admitted that observation of mere concomitance is unable to penetrate into its universality and necessity. Such knowledge is secured only when the assurance that A cannot possibly occur without B is acquired after elimination of all doubt about the opposite possibility. The organ of the elimination of such doubt and the conviction that the relation between A and B is necessary is nothing but reasoning. And even if it be supposed to be an aiding ally for the realisation of the conclusion, when thwarted by doubt, it must be admitted that it can be of real help if it has validity of its own[2]. The Naiyāyika makes reasoning a subordinate ally of perception as the organ of necessary concomitance. But this is only nothing short of perverse dogmatism. He would deny reasoning the credit it is entitled to and transfer it to perception, which we have seen to be absolutely incapable of the task. The Naiyāyika may contend that reasoning is not regarded by him as a valid instrument of knowledge and this is the reason why he would accord to it the status of a subordinate ally and nothing more. But there is no reason why reasoning should not have validity of its own. We have shown that it has a legitimate object of its own in the shape of universal concomitance and also that its finding is not contradicted by any other cognition.

The Mādhvas have sought to equate it with inference and this is also the position of a class of Buddhists, who call it *prasaṅgānumāna*, that is to say, inference employed for the demonstration of an absurdity. The Jaina demurs to accept this position. Inference is possible only if there is knowledge of necessary concomitance behind it. To

1 manaso bāhyendriyanirapekṣasya bahirarthasākṣātkaraṇe sāmarthyābhāvāt. SVR, p. 511.

2 *Ibid.*, p. 512.

make this knowledge of universal concomitance a case of inference will be a case of *petitio principii* or infinite regress. An infinite series of inferences will be necessary for the establishment of one universal concomitance, if inference be the source of knowledge of it. Each inference will fall back upon another universal concomitance and thus upon another inference. To get rid of this vicious infinite series it is necessary that there must be an independent source of knowledge of universal concomitance which is the necessary condition of inference in its turn. It seems that Vyāsatīrtha in the *Tarkatāṇḍava* makes reasoning the organ of necessary concomitance in the first instance, which is the literal meaning of the definition propounded by him[1]. Of course the finding of a reasoning can serve as the ground of inference, but this is only a secondary and derivative function of it. The criticism of the Jaina will also hold against the position of the European logicians who seek to make out induction to be a case of inference. This point will be presently elaborated in connexion with the examination of the Buddhist position on reasoning.

THE BUDDHIST POSITION EXAMINED

The content of reasoning is necessary concomitance and the *modus operandi* is the conviction of the absurdity of the opposite possibility. Both these findings are of the nature of judgments. Judgment is necessarily concerned with two concepts, which are synthesised by it. Concepts as such are tabooed in the Buddhist scheme of epistemology in which simple intuition, absolutely untouched by concepts, is the only organ competent to envisage reality as it is in itself. It will not be to our purpose to enter in this context into an elaborate examination of the soundness or otherwise of this extremist view. The Jainas along with the other realistic schools of philosophers, such as the Naiyāyikas, the Mīmāṃsists, particularly of the school of Prabhākara, and others, do not see eye to eye with the Buddhist philosophers and are positively of the opinion that there is no ground *a priori* or *a posteriori* for the condemnation of conceptual thought as inherently a vicious construction of human intellect.

1 *Cf. supra* p. 109.

The Jainas would only observe in this connection that the Buddhist has not been entirely consistent in his denunciation of conceptual thought, since he has been constrained to accept the validity of inference as an organ of knowledge[1]. The conditions of inference, that is to say, the premises and the conclusion registered by them, are judgments and hence conceptual in character. In spite of this fundamental weakness, in the judgment of the Buddhist, inference is still regarded as an organ of knowledge, because of its verification and agreement with reality. If this be the criterion of validity, then we shall show that reasoning fully satisfies this criterion and as such is fully entitled to the status, which is accorded to inference by the Buddhist. The Buddhist has however contended that the validity of inference is only vicarious and derivative, being ultimately traceable to intuition from which it emerges. But this seems to be an attempt at window-dressing inspired by the consciousness of weakness. It ought to suffice for our purpose to observe, whether its validity is borrowed or 'simulated,' that it is conceptual thought which makes simple indeterminate intuition, if possible at all, intelligible and capable of being turned to account. Intuition uninterpreted by conceptual thought is as good as non-existent. One cannot think, much less assert, that the intuition in question is of A, or B, or not of any thing else, since this involves conceptual thought. Besides all philosophical discussion will be robbed of its value, if conceptual thought is damned to be false on its own account, because philosophical discussion is capable of being conducted by means of language, which is suspect in the Buddhist eyes, dealing as it does in concepts and concepts alone. The Jaina would however be satisfied, if his arguments can compel the Buddhist to give reasoning the same status with inference.

The Buddhist however has contended that even if reasoning be regarded as competent to take stock of necessary concomitance, yet it will not possess validity of its own, inasmuch as reasoning necessarily brings up the rear of the cognition of the necessary concomitance,

1 savikalpakajñānarūpatve'py anumānasy'eva tarkasyā'pi pramāṇatvānatipātāt. SVR, p. 513.

secured by some other organ, and hence is bound to repeat the finding of the latter. Knowledge, to be valid must be not only in conformity with reality, but also new and original (*agṛhītagrāhī*). The Jaina however does not accept the charge of the Buddhist that reasoning makes known what is known by something else. It has been found in the course of examination of the Naiyāyika's position that no other organ of knowledge, except reasoning is competent to take stock of necessary concomitance between two classes of facts in their universal reference[1].

Let us however examine the Buddhist position critically and dispassionately. The Buddhist maintains that necessary concomitance can be conceived to subsist between a cause and an effect (*tadutpatti*) and between facts, which are bound by identity of constitution and nature (*tādātmya*). As regards non-cognition it is nothing but a case of constitutional identity and so it need not be considered separately from it[2]. Causality is a ground of necessary concomitance and so the determination of necessary concomitance can be achieved by the determination of causality. Let us consider the conditions of the knowledge of causality. It (causality) is determined by the observation of concomitance in agreement and of concomitance in difference, which has been analysed by the Buddhist into five cases of cognition, two positive and three negative. In the first instance, there is non-apprehension of the effect, say smoke, in a particular place. This is called non-cognition number one. In the second place, there is cognition of fire and cognition of smoke. These are two positive cognitions. In the third place, there occurs non-cognition of fire accompanied with non-cognition of smoke. There are two non-cognitions in this case. Thus in all there are five cognitions, viz. the initial non-cognition, the two subsequent cognitions, and finally the two non-

1 atha gṛhītagrāhitvaṃ tad abhidhīyate. tad apy ayuktam. yataḥ sādhyasādhanayoḥ sāmastyena vyāptis tarkasya viṣayo, na caitatpratipattau pramāṇāntaraṃ prabhavati. SVR, p. 513.

2 anupalabdheḥ punaḥ svabhāvahetāv antarbhāvān na tatra pṛthagavinābhāvagrāhakapramāṇacinte'ti. *Ibid.*, p. 514.

cognitions. Non-cognition is also a species of cognition[1]. This fivefold cognition at once gives us to understand that the two events are causally related-the antecedent being called the cause and the consequent the effect. Now the knowledge of the causal relation serves as the guarantor of the necessary concomitance between the cause and the effect. The effect is always determined by the cause. If it were not so determined, then the effect could be independent of the cause and hence could possibly occur without the antecedent occurrence of the cause. But this is simply absurd, since only what is eternally existent or eternally non-existent can be thought to be independent of a cause. The effect being a determinate event cannot be supposed to be eternally existent or eternally non-existent on pain of obvious self-contradiction[2].

As regards essential identity, it becomes the ground of necessary concomitance, because the opposite possibility of two facts, bound by essential identity of nature, occurring independently of one another, is contradicted by inference (*vipakṣabādhakānumānāt*). To cite an example from geometry, the fact that the sum of three angles of a triangle is together equal to two right angles is proved by necessary inference and the possibility of the sum of the three angles being more or less than two right angles is ruled out by inference alike. The Buddhist example of essential identity may be cited as the relation of existence with momentariness[3]. All existents are inferred to be momentary on the ground of their being existent facts. Existence involves momentariness in the same way as the three sides of a triangle involve three angles. That existence is necessarily concomitant with momentariness is proved by the consideration that the conditions of causal efficiency, which is the sole criterion of existence, are not

1 kārye hetau tāvad vyāpteḥ pratipattiḥ pratyakṣānupalambhapañcakāj jāyate...anupalambho'pi pratyakṣaviśeṣa eva lakṣayitavyaḥ...*yad* āha (Dharmakīrttiḥ)

dhūmādhir vahnivijñānam dhūmajñānam adhis tayoḥ/
pratyakṣānupalambhābhyām iti pañcavir anvayaḥ//

Quoted from the *Pramāṇavārttika* in the SVR, p. 514.

2 SVR, p. 514.

3 svabhāvahetau tv avinābhāvapratītir vipakṣe bādhakānumānāt. yathā kṣaṇikatvānumānaṃ sattvahetau vyāpakānupalambhāt. *Ibid.*

possible in the non-momentary. Now these conditions are succession or non-succession. Succession is the occurrence of an entity in two different moments and the non-succession is the opposite. These two opposite characteristics cannot possibly exist in one and the same thing without splitting up its identity into two. The non-momentary is however supposed to be an identity in itself, and as such cannot be susceptible of succession, which involves two opposite characteristics, determined by its relation to two different time divisions, one past, another present, or one present another future. The conditions of exercise of causal efficiency, namely, succession or non-succession, being proved to be incompatible with the non-momentary by inference, it follows that only what is momentary can be existent. The necessary concomitance of existence with momentariness is thus proved by inference of the impossibility of the non-momentary being existent[1]. Thus reasoning has no scope of its own, so far as the determination of necessary concomitance is concerned.

The Jaina, in reply observes that the contention of the Buddhist-that a series of cognitions and non-cognitions gives out the assurance that the observed data are causally related-is acceptable in so far as it does not outstrip the data in question. The cognitions and non-cognitions are nothing but perceptions, and as such are subject to the limitations of the present time and place. There is always the question of here and now in case of perceptual cognition. Perceptual cognition can never give us any dependable information about things, which are outside the context of here and now, in other words, about things, which are past, future and beyond the spatial context[2]. Thus something more than perceptual cognition is required to give insight into the causal relation, which by the very nature of it holds between two classes of events irrespective of limitations of space and time. In other words, causality is a necessary and universal relation. It has been contended that the very knowledge of causality afforded by the fivefold cognition carries with it the unimpeachable assurance

1 *Vide The Buddhist Philosophy Of Universal Flux*, chapters i-iv.

2 upalambhānupalambhasvabhāvasya dvividhasyā'pi pratyakṣasya sannihitamātraviṣayatayā deśādivyavahitasamastapadārthagocaratvāyogāt.

SVR, p. 514.

that it holds not only between the observed individuals, but extends to all the individuals of the classes concerned. It cannot be conceived that smoke is an effect of fire and will yet exist without fire, since this will be equivalent to the repudiation of the causal relation between them[1].

The Jaina replies, "True, but indeterminate sense-intuition, which has been denied by the Buddhist of ratiocinative and discursive activity, cannot be supposed to be competent for this elaborate process of ratiocination." Nor again can it be supposed that the conceptual thought, which immediately arises in the trail of indeterminate sense-intuition and interprets the content of the latter in terms of categories, can be equal to this undertaking. Because such conceptual interpretative thought only clarifies the contents of intuition and so cannot transcend its limitations[2]. If, however, some other conceptual thought is postulated for the comprehension of causality in its universal reference, then this would not repeat the finding either of indeterminate sense-intuition, or of the same as interpreted by categorising conceptual thinking. It has for its content something which is beyond the capacity of the aforesaid psychical processes. It must therefore be regarded as an original organ of knowledge. And this organ is no other than what we call reasoning.

As for the plea that in the case of facts related by essential identity, the necessary concomitance between them is understood by means of inference of the impossibility of the opposite alternative, it only betrays slipshod thinking and hasty judgment[3]. The inference of the absurdity of the opposite alternative, which is made by the Buddhist the organ of necessary concomitance of facts related by essential identity, is itself possible, if there is the knowledge of another

1 tathā ca Kirttiṇā (Dharmakirttiṇā) kīrttitaṃ *Vārttike* (*Pramāṇavārttike*)
kāryaṃ dhūmo hutabhujaḥ kāryadharmānuvṛttitaḥ/,
sa bhavaṃ stadabhāve'pi hetumattāṃ vilaṅghayet//,
Quoted from the *Pramāṇavārttika* in the SVR, p. 515.

2 pratyakṣapṛṣṭhabhāvino vikalpasyā'pi pratyakṣagṛhitamātrādhyavasāyitvāt sarvopasaṃhāreṇa vyāptigrāhakatvābhāvaḥ.

Ibid., pp. 514-15.

3 *Ibid.*, p. 515.

universal concomitance at its back. But what will be the organ of this universal concomitance? If you make inference the organ of it, the result will be a vicious infinite series, as has already been shown by us in connection with the examination of the Madhva position. The Jaina therefore concludes that there is no way out possible for the justification of inference without postulating an independent and separate organ for the knowledge of universal concomitance. And reasoning is this organ.

We have shown that reasoning possesses the criterion of originality. It again has the further criterion of agreement and verification. These two are the tests of an organ of knowledge. Thus there is not the slightest justification for repudiating the independent validity of reasoning. If the finding of reasoning, which we have shown to be universal and necessary concomitance, be regarded as problematic and subject to doubt, this will be laying the axe at the very root of inference. In conclusion we may point out that reasoning possesses another trait, which may be regarded as the third criterion of truth, namely, its capacity to rebut doubt and misconception. We have taken elaborate pains to prove in this dissertation that reasoning effectively and successfully rebuts doubt of the opposite alternative[1]. The Jaina logician insists that this should be regarded as the final clincher of the issue, and in this he has the support of Śrīdhara, Vyomaśivācārya and the whole school of Mādhva philosophers, who have unanimously protested against the absurdity involved in the denial of validity to reasoning, and in having at the same time recourse to it as the instrument for the rebuttal of doubt.

1 *Vide* chapter i.

CHAPTER IX

CLASSIFICATION OF REASONING

Section I

Udayana in his *Ātmatattvaviveka* has classified reasoning under five heads, viz. (1) self-dependence (*ātmāśraya*); (2) mutual dependence (*anyonyāśraya*); (3) vicious circle (*cakraka*); (4) the vicious infinite (*anavasthā*); (5) *reductio ad absurdum* (*aniṣṭaprasaṅga*- literally emergence of an undesirable issue)[1]. Varadarāja has endorsed this fivefold classification in the *Tārkikarakṣā* and quoted Udayana's *ipissima verba* in his support[2]. Viśvanātha also in his gloss on the *Nyāyasūtra* (I. i. 40) has dittoed this classification in deference to Udayana. He has however mentioned other varieties of reasoning as propounded by older logicians, though he has repudiated them as genuine cases of reasoning. These cases are: (1) initial presentation (*prathamopasthitatva*); (2) conventional or empirical induction (*utsarga*); (3) absence of decisive proof i. e. of crucial evidence (*vinigamanāviraha*); (4) simplicity (*lāghava*); (5) complexity (*gaurava*). Viśvanātha is not prepared to accept them as orthodox instances of reasoning on the ground that they are not calculated to enforce an undesirable consequence which is the essential character of reasoning. They have however been set forth as instances of reasoning on the ground of their serving as auxiliaries to an accredited organ of knowledge. Genuine orthodox cases of reasoning also operate as auxiliary factors to organs of knowledge and it is this participation in this functional characteristic in common with the accredited cases of reasoning, which is responsible for their subsumption under the genus of reasoning. It is apparent that they can at most be regarded as cases of reasoning

1 sa cā'tmāśrayetaretarāśrayacakrakānavasthāniṣṭaprasaṅgabhedena pañcavidho'pi...

ATV, p. 863.

2 sa cā 'tmāśrayetaretarāśrayacakrakāśrayānavasthāniṣṭaprasaṅgabhedena pañcavidha iti.

TR, p. 186.

only in a secondary sense, made possible by the usual device of extension of meaning on the basis of partial analogy.

But reasoning (*tarka*) has been used as the symbol of the number six and Udayana too is said to have accepted this usage[1], although he has only spoken of the five species of reasoning. The expression sixfold reasoning (*ṣaṭtarkī*) which is widely current in philosophical parlance is also an indication of the sixfold classification of *tarka*. The sixth variety has been given by Śrīharṣa in his *Khaṇḍanakhaṇḍakhādya* after enumeration of the aforesaid four instances and it is called recrimination or *tu quoque* (*pratibandī*)[2]. The fifth variety is however called *vyāghāta* (contradiction).

We do not meet with the slightest suggestion of classification of reasoning in the *Nyāyasūtra*, *Bhāṣya*, *Vārttika*, and the *Tātparyaṭīkā*. Udayana seems to speak of the fivefold classification for the first time in the *Ātmatattvaviveka*[3].

Śrīharṣa who is posterior to Udayana at least by a century or two has referred to the sixfold classification of reasoning in the *Khaṇḍanakhaṇḍakhādya*[4]. This is not an original formulation of Śrīharṣa, but only a restatement of the position of an adherent of the Nyāya school who must remain anonymous for want of data available to us. It is obvious from the enumeration and definition of the six classes of reasoning that these have not been borrowed from Udayana's works. It is further worthy of remark that *reductio ad absurdum* has been mentioned as the fifth variety of reasoning by Udayana[5]. But if we look closely into the situation, it will transpire that the enumeration of *reductio ad absurdum* as an additional variety of reasoning by Udayanācārya is not logically justifiable. We have shown time and again in the course of our dissertation that emergence of an undesirable

1 tarkāmbarāṅkapramiteṣv atīteṣu śakāntataḥ/
varṣeṣ Ūdayanaś cakre subodhām *Lakṣaṇāvalīm*//
See *Lakṣaṇāvalī*, p. 13.

2 api cātmāśrayo 'nyonyāśrayaś cakrakaṃ vyāghāto'navasthā pratibandī ce'ty āpādyair bhidyamānā ṣaṭtarkī'ṣyate. KhKh, p. 1291.

3 ATV, p. 863.

4 KhKh, p. 1291.

5 ATV, p. 863.

consequence, which is known as *reductio ad absurdum*, is rather the general character of reasoning as such and ought not to be recognised, regard being had to logical consistency, as a specific variety of it. All cases of reasoning are cases of *reductio ad absurdum* without exception. Mallīnātha, the commentator on the *Tārkikarakṣā*, has also expressed the view that the recognition of *reductio ad absurdum* as a separate species of reasoning is unsupportable by logic[1]. Śrīharṣa has therefore stated the first four varieties enunciated by Udayana and completed the list by adding two other varieties, namely, contradiction (*vyāghāta*) and *tu quoque* argument (*pratibandī*)[2]. Śrīharṣa's classification has been accepted *in toto* by Vaṃśīdhara Miśra in his *Sāṃkhyatattvavibhākara*, a commentary on the *Sāṃkhyatattvakaumudī*[3].

Both Bhagīratha Ṭhakkura and Raghunātha Śiromaṇi, the commentators on the *Ātmatattvaviveka* have also remarked that *reductio ad absurdum* is not a particular variety of reasoning, but the general character of it, which appertains to all the recognised varieties. The specific mention of it as a separate instance is inspired by the desire to lay emphasis on its supreme importance. It is a popular differentiation, quite on a par with the differentiation of cattle and bullock. One generally speaks that a person has a hundred head of cattle and twenty bullocks. This is a loose classification and can be justified only for the sake of emphasis, which is ordinarily known as *gobalīvardanyāya*, the maxim of cattle and bullock. This shows that the classification of reasoning with reference to *reductio ad absurdum* is rather loose and popular and is not logically necessary[4].

But such differentiation is also endorsed by convention even in the proceedings of legal and academic institutions. Thus the expression 'the Vice-chancellor and the Syndicate', or 'the King and the country' are approved forms of expression, although the Vice-chancellor is an

1 See Mallinātha's commentary on TR, p. 187: ......katham aniṣṭaprasaṅgasy'eha tarkāvāntarabhedoktiḥ?

2 KhKh, p. 1291.

3 STV, p. 73.

4 ātmāśrayādīnām apy aniṣṭaprasaṅgarūpatayā govṛṣanyāyād vibhāgaḥ. ATVP, p. 865. See also ATVD, p. 866.

essential part and parcel of the Syndicate, and the king is an essential member of the nation, though the most important and prominent. It is for the sake of emphasising the paramount importance of a particular factor that the propriety of such differentiation is not called in question. The separate mention of the *reductio ad absurdum* is equally a case of emphasis inspired by the recognition of the supreme rôle played by it.

Śaṅkara Miśra in the *Vādivinoda*, a work on practical logic, has given almost the same classification of reasoning as Udayana. But he has very wisely and judiciously named the fifth variety emergence of an absurdity other than that involved in the aforesaid cases (*taditarāniṣṭaprasaṅga*)[1]. This saves the classification from the charge of loose talk and makes this fivefold classification entirely self-sufficient and self-consistent.

It is remarkable that Veṅkaṭanātha, a celebrated exponent of Rāmānuja's system of thought, has followed Udayana in his classification of reasoning and has only sought to save the position by calling it a pure *reductio ad absurdum* (*kevalāniṣṭaprasaṅga*)[2]. But this emendated nomenclature does not make an improvement and is exposed to the same objection. In the *Prajñāparitrāṇa*, a work of the Rāmānuja school, the pure *reductio ad absurdum* has been divided into two subvarieties, called opposition (*virodha*) and impossibility (*asambhava*)[3]. Veṅkaṭanātha in the *Nyāyapariśuddhi* has added three other varieties, namely, (1) *tu quoque* (*pratibandī*); (2) equalisation (*samavacana*); and (3) double noose (*ubhayataḥspāśā*)[4]. Śrīnivāsa, the commentator of the *Nyāyapariśuddhi*, has added two further varieties, namely, complexity (*gaurava*) and simplicity (*lāghava*)[5].

1. VV, p. 19.
2. NP, p. 347.
3. Prajñāparitrāṇe tu kevalāniṣṭaprasaṅgam eva dvidhākṛtya ṣoḍhā tarka uktaḥ.

ātmāśrayaṇam anyonyāśrayaṇam cakrakaṃ tathā/
anavasthā virodhaś cāsambhavaś ce'ty amī budhair iti//
quoted in the NP, p. 347.

4. eteṣām eva prakārabhedāt pratibandīsamavacanobhayataḥspāśādayaḥ prasaṅgabhedā draṣṭavyāḥ. *Ibid.*
5. See Śrīnivāsa's commentary on NP, pp. 347-48: ādipadena gauravalāghavatarkayor grahaṇam. . . .

Śrīharṣa has shown five other varieties of reasoning in addition to the six noticed above. These are: (1) absence of decisive proof i.e. of crucial evidence (*vinigamanāviraha*); (2) conventional or empirical induction (*utsarga*); (3) complexity (*kalpanāgaurava*); (4) simplicity (*kalpanālāghava*); (5) impertinence (*anaucitya*) *alias* impudence (*vaiyātya*). He is definitely of the opinion that these additional varieties should be accorded co-ordinate status with self-dependence and the rest, because they participate in the general character of reasoning viz. *reductio ad absurdum*, and also because they cannot be included under any of these recognised varieties by reason of difference of contents. Thus Śrīharṣa states eleven varieties of reasoning[1]. Śaṅkara Miśra in his commentary on the *Khaṇḍanakhaṇḍakhādya* regards these additional cases as simulations of reasoning and not as orthodox instances[2]. But in the *Vādivinoda* he has definitely pronounced his opinion that though there is divergence of views regarding these varieties, as to whether they are simulations or genuine cases of reasoning, it is proper that these should be regarded as legitimate varieties of reasoning, because they cannot be included under any one of the accepted varieties, and particularly because simplicity etc. have been employed in standard works as cases of reasoning[3]. Thus his difference from Śrīharṣa is more or less a make-believe, since he dittoes the classification given by Śrīharṣa almost *totidem verbis*.

We now propose to consider the nature of these varieties of reasoning by means of the definitions recorded by Śrīharṣa. Historically speaking we are not aware of any work of the Nyāya school in between Udayana and Śrīharṣa, in which the classification of reasoning and the definitions of the different varieties can be traced.

1 apare'pi viṣayabhedāt tarkabhedā ātmāśrayādivan mantum ucitāḥ. tad yathā avinigamaḥ, utsargaḥ, kalpanāgauravalāghave cā'naucityaṃ ce'ti.

KhKh, p. 1319.

2 See Śaṅkara Miśra's commentary on KhKh, p. 718 (ed. Mohanlāl Vedāntācārya and R. Bhāgavatācārya): tarkapratirūpakatvenā' bhimatānām utsargādīnāṃ khaṇḍanam abhidhātuṃ svarūpam ādarśayati.

3...avinigamādayas tarkapratirūpakā ity anye. tarkā eve'ty apare. yuktañ caitat, anyatrāntarbhāvayitum aśakyatvāt. VV, p. 37.

Udayana however has barely specified the names, and though the nature of these varieties of reasoning is constructible from his treatment, Udayana has not propounded formal definitions[1].

SECTION II

DEFINITIONS OF THE DIFFERENT VARIETIES OF REASONING

(1) Self-dependence (*ātmāśraya*)

It consists in the situation when A directly and immediately presupposes its own self in respect of genesis, subsistence, and cognition[2]. The adverbs 'directly' and 'immediately' are significant and intended to preclude the extension of the definition of self-dependence to mutual dependence and vicious circle. In these two latter varieties also A presupposes A, that is, its own self, but only mediately and indirectly. The criterion of self-dependence therefore lies not in the presupposition of its own self solely and wholly, but only when the presupposition is direct and immediate. In other words, in self-dependence there is only one term, whereas in mutual dependence there are two, and in vicious circle more than two.

Let us now give an instance of self-dependence in respect of genesis. If, for instance, it were contended that A was the cause of A, that is, its own self, then A would be split up into two entities which are not identical, since causal relation cannot centre round one term, but requires at least two terms. The instance of self-dependence in respect of subsistence may be propounded as follows: suppose it were contended that the cup existed in its own self, in other words, it were its own container and content; then the cup would be split up into two entities, since the container and the content cannot be one identical substance.

The case of self-dependence in respect of cognition would arise if it were contended that A for its cognition presupposed the cognition of its own self, that is, the cognition of A itself. The cognition could never take place, because the same thing (that is to say,

1 ATV, p. 863.

2 svasyā'vyavahitasvāpekṣaṇam ātmāśrayaḥ.
KhKh, p. 1291.

the cognition of A) cannot be the condition presupposed and the result conditioned by it. The two must be numerically different. Self-dependence in respect of cognition does not at bottom differ from self-dependence in respect of genesis. If we substitute 'cognition' for 'the object' it will be found that cognitional self-dependence is but a case of originational self-dependence and the two cases are not materially different. To say that A depends for its cognition on this very cognition of A, is tantamount to saying that the cognition of A depends for its genesis upon its own self, that is, the self-same cognition of A. This also holds good of mutual dependence, because the dependence of the object for its cognition upon the self-same cognition of it, is nothing but a case of the dependence of the cognition for its genesis upon the self-identical cognition. So the cases of self-dependence in respect of genesis and in respect of cognition are at bottom a case of self-dependence in respect of genesis.

(2) Mutual dependence (*anyonyāśraya*)

This arises when between two terms, the first term presupposes the second term and *vice versa* immediately and directly, either for its genesis, subsistence, or its cognition[1]. Thus if A depended upon B and B in its turn depended upon A for its genesis or subsistence, and A depended in order to be cognised upon the cognition of B, and B again in order to be cognised were found to depend upon the cognition of A, the result would be a case of mutual dependence in respect of genesis, subsistence and cognition respectively.

(3) Vicious circle (*cakraka*)

When one self-identical term requires its ownself for genesis, subsistence and cognition through the intervention of two or more terms, it gives rise to the argument in vicious circle[2]. This also arises when between two terms, the first requires the second, and the second requires the first through the intervention

1 anyonyasyā'vyavahitānyonyāpekṣitvam anyonyāśrayaḥ.

KhKh, p. 1291.

2 antaritasya tad eva dvayam ātmāśrayo'nyonyāśrayaś cakrakam.

Ibid., pp. 1291-92.

of the third or the fourth. The fundamental character of these three types of reasoning is that the same term is required to serve as the condition and the result, and their difference lies in the number of steps involved in between. When the terms are two and each is required by the other it is called mutual dependence, and when the number of terms is three or more, it is called argument in circle. It must be borne in mind that the argument in circle arises only when the number of terms is limited. In all these cases however the conclusion comes back to the starting-point. When however the number of terms is infinite, it will be a case of infinite regress as we shall show immediately after treatment of this type. We can illustrate these three different types as follows: when A requires A immediately and directly it becomes a case of self-dependence. When A requires B immediately and directly, and B requires A immediately and directly, the argument in question will be a case of mutual dependence. When A requires B and B requires C and C requires A the argument becomes a case of vicious circle. The chain of intervening terms may be extended indefinitely, that is to say, D, E, F, etc. and all these cases will be instances of circular reasoning, provided we stop at a limit. In other words, in circular reasoning there must be a first term and also a last term.

Let us now give one concrete illustration. The Vaiśeṣika philosopher defines the self as the substratum of cognition. This definition if subjected to scrutiny transpires to be an example of an argument in vicious circle. In reply to the question, "What is a cognition?" the Vaiśeṣika would say "A cognition is that which possesses the attribute cognitionhood". But the answer is not obvious in its meaning and requires further clarification. 'Cognitionhood' is not a self-evident concept. Naturally the question arises, What is cognitionhood? The Vaiśeṣika gives this reply: it is a universal which subsists in a kind of specific quality of the self, and does not subsist in pleasure, pain, will and so on[1]. But this also is not sufficiently clear. The opponent

1 According to the Vaiśeṣika the self is possessed of eight specific qualities, namely, cognition, pleasure, pain, desire, volition, aversion, merit, and demerit. Thus cognitionhood is the common attribute which exists in all cases of cognition and does not appertain to the remaining seven specific qualities.

may ask, What is a universal? And the Vaiśeṣika's answer is that the universal is nothing but the uncommon condition of synthetic cognition, which makes possible the classification of a number of individuals under one genus.

Now, let us stop at this final answer and consider the logical value it possesses. The Vaiśeṣika started with the assertion that the self was the substratum of cognition, and when questioned about the meaning of cognition, he was constrained to make a series of explanatory statements, the last of which involves synthetic cognition as an element. But to a man who wants to be enlightened as to what cognition consists in, the answer, which makes cognition an element in it, cannot be expected to throw any light on the problem. The Vaiśeṣika's answer only seeks to explain cognition by means of cognition itself only after making a series of intermediate statements, which would rather serve the purpose of drawing a red-herring across the track of enquiry.

That the argument is a case of vicious circle will be apparent from the following consideration. Well, cognition is asserted as the proof of the universal; the universal is asserted as the proof of the particular kind of universal, cognitionhood; the cognitionhood is asserted as proof of cognition. Thus cognition is said to be cognition itself only through a number of intermediate assertions[1].

This also may be cited as an instance of mutual dependence. If cognition is proved, cognitionhood can be established, and cognitionhood if established can establish cognition. Here there are two terms and so it is a case of mutual dependence. It may also illustrate self-dependence, because the cognition is proved by cognition itself[2].

(4) The vicious infinite (*anavasthā*)

The continuity of the chain of probans and probandum, of ground and consequent without limit constitutes the vicious infinite[3]. If

1 jñānādhikaraṇādilakṣaṇanirūpaṇadvāreṇa cakrakādy-āpatteḥ.

KhKh, p. 236.

See also Ānandapūrṇa's commentary on KhKh, pp. 237-39.

2 See Ānandapūrṇa's commentary on KhKh, pp. 238-39.

3 upapādyopapādakapravāho 'navadhir anavasthā.

KhKh, p. 1292.

this continuity be endorsed by recognised canons of proof, it will cease to be vicious. In order to distinguish the latter from the infinite series that is vicious, we propose to call it legitimate or valid infinite. Śrīharṣa has spoken of two infinite series: one regressive and the other progressive. The former is called *regressus ad infinitum* and the latter may be dubbed as *progressus ad infinitum*[1]. Let us now elucidate it by means of the following illustrations. It is contended by some philosophers that a thing can be known by means of a cognitive instrument, which can be effective only if it is previously known. But this contention is bound to give rise to the vicious infinite called *regressus ad infinitum*. If it is insisted that the organ of cognition must be cognised before it can make anything known, the cognition of the cognitive organ will presuppose another cognitive organ, because a thing, whether an organ or an object of cognition, can possibly be known only by means of another organ. But the second organ in the receding series would require a third organ to make it known, and the third again a fourth and so on to infinity. If we were to stop at some ultimate organ of cognition, that is to say, if we were to posit that some organs remained uncognised the result would be that no cognition would take place, since it was postulated that only a cognised organ could make anything known. The result would be however not only failure of the cognition of the organs, but also the failure of the cognition of the matter in hand. It was in order to explain the cognition of a particular object that the series of organs and that of their cognitions were postulated. But the admission of an uncognised organ at some limit ends in proving that the cognition of the object under consideration cannot materialize. The series of attempts has ended in smoke and amounts to the confession of failure to explain how an object can be known. If, on the other hand, the series of organs and their cognitions, which are postulated for the justification of the cognition of the object in question, were pushed back without a halt, the result would be the self-same

1 ...tametam adhodhāvantim anavasthām ācakṣate...tametam ūrdhvam dhāvantim anavasthām ācakṣate.

KhKh, pp. 1294-95.

incongruity. The series of cognitions required to justify the fact of the felt cognition of an object, would never be completed and so the required justification would not be feasible. This is an instance of the recessive infinite series designated by us as *regressus ad infinitum.*

The *raison d'être* of infinite series serving as a *reductio ad absurdum* is that it fails to explain a datum, the necessity of which has impelled its advocate to postulate a series of which there is no last term, which could justify the original datum. This is called the infinite series which militates against the original datum, which is the starting point of the series[1].

Let us now consider an example of the second type of the infinite series which we have called *progressus ad infinitum.* The Naiyāyika believes that things are mutually discrete and distinct and their distinction is constituted by differentiating attributes. The statement of these differentiating attributes is called definition. The Naiyāyika further asserts that definition is essential to the understanding of the nature of a thing. But this overweening confidence in definition has been regarded as an uncritical attempt at cheap and easy evaluation of things by Nāgārjuna, the Vedāntists, and by such western thinkers as Bradley.

Let us bring home this situation by means of a well-known definition propounded by the Nyāya-Vaiśeṣika school. Earth is defined as a substance possessed of smell. Smell is the differentiating characteristic of earth. It is by means of this attribute that earth is distinguished from all other substances. But smell can serve as a differentiating characteristic only if it can be proved in its turn to be a *differentiated* attribute. But what can constitute its differentiation? Certainly only those characteristics which are found only in smell and not in others. Thus, if we probe the question more closely, it transpires that smell can operate as a differentiating attribute, only if it is differentiated in its turn by some characteristics of its own. So if we are not content to suspend our philosophical speculations owing to intellectual indolence and inertia, which is the case with the average mass of mankind, we must face the situation that the current defini-

1 mūlakṣatikarīm āhur anavasthāṃ hi dūṣaṇam/
Nyāyamañjarī, p. 21 (ed. Sūrya Nārāyaṇa Śukla, Chowkhamba)

tions of standard text-books in philosophy are only devices to lull our speculative impulse into the slumber of dogmatism. Smell can act as the differentiating characteristic of earth only if it is known to be differentiated by its own characteristics. But these latter characteristics, again, will fail to differentiate, if they are not again known to be different. Thus one definition will necessitate an unending series of definitions with the result that the original datum with which we started on our quest will fail to justify itself. The justification of a *prima facie* definition which we accepted as the original datum, can be achieved only if there is an ultimate definition, which is self-evident and thus will not stand in need of another definition. But the denial of this possibility makes this an instance of progressive infinite series which we have called *progressus ad infinitum*.

But all infinite series are not vicious. If there be some datum, primal or subsequent, which is established by independent logical proofs, then the infinite series that may arise in connection with this proved datum will not affect the validity of the original proposition, and so will not be vicious. For instance, the example of seed and sprout is a case of legitimate *regressus ad infinitum*. The seed is the cause of the sprout and the sprout again is the cause of the seed. But the fact that the seed when planted in some favourable soil produces the sprout, is established by the Joint Method which is the legitimate canon for ascertaining causal relation. The same also holds good regarding the sprout, which eventually produces the seed. So though we are compelled to postulate that a seed is the cause of a sprout, and a sprout again is the cause of a seed, and the chain of these links of cause and effect is bound to be pursued infinitely in the past, yet the causal relation between seed and sprout is not invalidated in the least, because the causal relation between a particular seed and a particular sprout is independently established by a legitimate organ of knowledge, irrespective of the consideration that the causal chain has had an infinite past history and will have an infinite future career. The *raison d'être* of infinite series acting as a *reductio ad absurdum* lies in the fact that there is mutual dependence between a supposed cause and an effect in respect of genesis, subsistence, or cognition. But the causal relation between a seed and a sprout is ascertained independently by

observation of concomitance in agreement and difference without reference to the past or the future series. It would have been a vicious series had the self-same individual seed and the self-same individual sprout been required to serve as cause and effect alternately. But though the seed is the cause of the sprout, and the sprout again is the cause of the seed, the two individuals are self-contained, so far as their causal relationship is concerned. The individual seed which is the cause of the individual sprout is not the effect of that sprout, but of a different individual sprout that occurred in the past. The pairs of cause and effect are numerically different and hence there is no mutual dependence. The fact that the series is extended over the three divisions of time, the past, present and future, is due to the fact that the history of the physical world is an uninterrupted course of events to which we cannot set an arbitrary limit.

Let us now consider an instance of legitimate progressive infinite series. It is a fact that a quality generates a relation and a relation generates a quality. Take for instance, the proposition "Sugar is sweet". Here the quality 'sweetness' by virtue of its belonging to sugar generates a relation between the predicate and the subject. Sugar can be sweet only if there is a relation between the sugar and the sweet. But this relation again necessarily generates a quality, the quality of standing in a relation to sweetness. Thus sugar has not only sweetness as a quality, but also the quality of standing in a relation to sweetness. This derivative quality must again generate a relation between itself and sugar, because a quality can belong to the subject, only if it stands in a relation to it. This latter relation will again give rise to a further relational quality, namely, the quality of standing in that relation. In this way the chain of qualities and relations will be generated infinitely. But this infinite series does not invalidate the original proposition "Sugar is sweet", because the quality and relation involved is not in any way dependent in respect of genesis, subsistence, and cognition upon the progressive series of qualities and relations that will be generated.

(5) *Tu quoque* argument (*pratibandī*)

It arises when the arguer does not care to refute the charge of an

undesired contingency brought home by the opponent against him, but ascribes the same consequence to the opponent[1]. For instance, suppose that the Vedāntic monist proves the unreality of the world, and the dualist without refuting the Vedāntist's argument affirms that if the world were unreal, Brahman too would be unreal. This is nothing but a case of recrimination, because the dualist virtually admits the validity of the argument of the Vedāntist. The legitimate course of action would be to expose the fallacies of the opponent's argument, and the mere allegation of an unacceptable emergency has no logical cogency.

A striking example of *tu quoque* argument has been given in the *Nyāyavārttika*. In order to refute the Buddhist doctrine of flux Uddyotakara, the author of the *Nyāyavārttika*, asserts the proposition: "A positive effect inheres in its material cause". For instance, a piece of textile is produced from the yarns and again inheres in them. It is obvious that the cause must be antecedent to the effect. But it is equally obvious that the effect should also inhere in the *causa materialis*. Thus the material cause must exist in the antecedent moment and also in the moment in which the effect is produced[2]. It follows therefore that the material cause at any rate cannot be fluxional in the sense of existing for one moment only. In the least it must exist for two consecutive moments. The denial of this would involve the consequence that a product will have no material as its support. An unsupported product is an impossibility. The Buddhist in reply to this contends that an effect is without a support. There is no logical necessity that it must have a support to inhere in[3].

Uddyotakara rejoins that this sweeping denial of a material support is an illogical assertion. It could be accepted if an instance of unsupported effect were produced by the Buddhist. The truth

1 svābhyupagatadoṣatulyatā pratibandī.
KhKh, p. 1292.

2 kāraṇaṃ ca kāryādhikaraṇam atas tenā'pi kāryakālo 'nubhavanīya iti.
NV, p. 436.

3 anādhāram eve'ti cet? atha manyase pratītya kāraṇaṃ kāryam utpadyate iti kva kiṃ vartata iti. *Ibid.*

of a universal proposition can be brought home, if an example acceptable to both the proponent and the opponent is demonstrated. But no such example approved by both the parties is made available by the Buddhist, and the absence of such an approved example should be the sufficient condemnation of the contention of the Buddhists[1].

The Buddhist might rejoin that the absence of an approved example cannot be a fault. The Naiyāyika also cannot put forward an approved example of a product having a material support. Whatever might be produced as an instance, the Buddhist will refuse to accept it as an instance in point. So the position is one of equality, so far as the absence of a commonly accepted example is considered[2].

Uddyotakara observes that this is no argument at all. To say that the position is the same or similar is devoid of logical cogency inasmuch as it amounts to the admission of the truth of the charge brought against him, and this admission is sufficient to condemn the opponent's position[3].

There is another point in connection with the *tu quoque* argument, which deserves consideration to make the treatment complete. Śrīharṣa in the *Khaṇḍanakhaṇḍakhādya* thinks that the upshot of this type of reasoning is the demonstration of the equality of both the parties, regard being had to the fact that their positions are equally open to the same or similar kind of objection. In support of it Śrīharṣa quotes Kumārila's *ipse dixit*: "Where both the positions are open to objections of equal gravity, and their solution is of equal value, one of the parties should not be singled out for condemnation"[4]. It is apparent from the position adopted by Uddyotakara that he does not regard it as a case of indecisive argument. On the contrary he contends that the onus of proof lies on the opponent, and

1 tan na, dṛṣṭāntābhāvāt-na hi kaścid ubhayapakṣasampratipanno dṛṣṭāntaḥ kāryam anādhāram astī'ti. NV, p. 436.

2 kāryam ādhāravad ity atrā'pi na dṛṣṭānto 'stī'ti samānam. *Ibid.*

3 samānam ity anuttaram abhyupagamāt. abhyupagatam tāvad bhavatā nā'smat-pakṣe dṛṣṭānto 'sti. *Ibid.*

4 samānam ity anuttaram...iti bruvan nUddyotakaro "yatrobhayor" ityādi vadato Bhaṭṭasya pratibhaṭikartavyaḥ. KhKh, p. 993.

since he fails to establish his position by an independent line of argument, the opponent alone should be convicted of failure. The position therefore is not one of equality on both sides, since Uddyotakara maintains that the charge of equalisation is capable of independent refutation, whereas Kumārila and Śrīharṣa are of the opinion that both the proponent and the opponent in such a situation should be held to be in the same predicament.

(6) Absence of decisive proof i.e. of crucial evidence
(*vinigamanāviraha*)

When more than one alternative is possible, and the balance of logical evidence is equally distributed between them, the acceptance of one and the consequential rejection of the other are open to the charge of absence of decisive proof[1]. For instance, it is a moot problem in the Vaiśeṣika philosophy whether the two attributes, namely, 'being an element' and 'being possessed of limited magnitude' can be regarded as class-characters. We propose to call these attributes elementality and dimensionality for the sake of brevity and convenience.

The Vaiśeṣika philosopher holds that two or more universals can co-exist only if they are related as genus and species, that is to say, when the extension of one universal is included in that of another universal. Thus, substance-universal (*dravyatva*) and earth-universal (*pṛthivītva*) are found to co-exist in any earthy substance, say a jar. The extension of substance-universal is wider and more comprehensive than that of earth-universal in that the former occurs not only in earthy substances but also in water, air, and so on. If two generic attributes are not related as higher and lower in the sense of genus and species as noted above, they are not regarded as class-character or universal in the strict sense of the term[2]. The criterion of higher and lower universals is that the latter in its extension is included within the extension of the former, so that though the former may occur independently of the latter, the latter is bound up with the

1 vikalpenā 'nvayāvagamayogye ekasmin nabhyupagate tad ekadeśānvaya-niyamanirdhāraṇā 'śakyattvam avinigamaḥ. KhKh, p. 1319.

2 ...samāviṣṭayoś ca parāparabhāvaniyamaḥ, anyūnānatiriktavṛttijātidvaya-kalpanāyāṃ pramāṇābhāvāt. NKu, p. 79.

former as a matter of necessity. If the possibility of occasional independent occurrence and occasional co-existence of two universals be admitted, then the co-existence of the cow-universal and the horse-universal in the same substratum cannot be ruled out as a logical impossibility[1]. One might contend that as there is no evidence available of the co-existence of these two opposed universals, the confusion of the cow-universal and the horse-universal in the same substratum cannot be seriously entertained as an ontological possibility. But this contention being based upon an empirical generalisation cannot rule out the possibility, unless it be backed by an *a priori* logical necessity. It has been found that empirical observation, however extended and wide in its scope, is set aside by experience of an opposed coincidence. Thus one might have contended that the generalisation "All crows are black" was a universal proposition. But the discovery of white crows in Australia has proved the invalidity of this universal proposition. So the mere testimony of hitherto available experience that cows and horses are distinct and accordingly their respective universals have not been found up till now to co-exist in one substratum, cannot be regarded as an unimpeachable evidence of the utter impossibility of their co-existence in future[2].

The situation however becomes entirely different once the rule propounded by Udayana be accepted that two or more universals in order to be co-existent must be related as higher and lower in the sense of being includent and included in respect of extension.

Let us now apply the results attained by this metaphysical digression to the case of the co-existence of the attributes elementality and dimensionality. These two attributes, though not related as includent and included, serve by virtue of the fact that they occur in a number of individuals as synthetic principles exactly as accredited universals do. The attribute of elementality belongs to all the five varieties of elements, namely, earth, water, fire, air, and ether. So this synthetic attribute can *prima facie* be regarded as a universal.

1 parasparaparihāravatyoś ca samāveśe gotvāśvatvayor api tathābhāvaprasaṅgāt.

NKu, p. 79.

2 NKu, pp. 79 *et seq*.

Likewise the attribute of dimensionality also belongs to a number of substances including the first four elements, and the mind which is held to be atomic in dimension by the Nyāya-Vaiśeṣika school. It has every claim to be regarded as universal, since it satisfies the test of synthesising a number of individuals. But these two attributes in spite of their synthetic function are not regarded as universals, because they are not related as higher and lower. The mind is not an element and ether (*ākāśa*) though an element is not possessed of limited magnitude. Thus the two attributes being found to exclude one another, so far as their incidence in ether and mind respectively is concerned, are not accepted as universals, since they fail to satisfy the requirement of the law of the co-existence of universals that they should be related as higher and lower[1].

We have found that the attributes of elementality and dimensionality are not regarded as universals by the orthodox adherents of the Nyāya-Vaiśeṣika school. But it may be legitimately posed that though both are not capable of being accepted as universals, we do not see any logical incompatibility if either of them is accepted as an orthodox instance of universal. No harm accrues if either elementality or dimensionality be accepted as a universal, though we admit in deference to the law of Udayana that both cannot be regarded as universals. The admission of one of them to the rank of universal does not offend the law, and so there is no logical bar to this possibility. But here the type of reasoning we are considering, namely, absence of crucial evidence comes in. Why should we accept one and reject the other? As no reason for preferential treatment can be made out, both of them are on the same level, and so must sink or swim together. When both of them cannot be accepted as universals, neither of them should singly be favoured with differential treatment[2]. The case under consideration is on a par with that of two rival arguments,

1 saṃkaraś ca parasparātyantābhāvasamānādhikaraṇayor ekatra samāveśaḥ bhūtatvāder jātitve bādhakaḥ.

Din, pp. 77-8.

2 See Śaṁkara Miśra's commentary on KhKh, p. 718: ...kiṃ bhūtatvaṃ mūrtatvaṃ vā jātir atas tatrai 'katarasya jātitvagrāhakaṃ pramāṇaṃ vinigamanāvirah pratibadhnāti.

which contradict each other[1]. Here also the acceptance of the one as a valid argument and the rejection of the other as fallacious might avoid the contradiction involved. But as there is no reason for preference the two are rejected without any distinction being made between them, because of the lack of special reason in favour of one. It is concluded therefore that the two attributes, elementality and dimensionality must be rejected as false claimants to the rank of universal.

The ground of rejection of their claim is absence of crucial evidence in favour of one and for the exclusion of the other. So the legitimacy of this type of reasoning has to be admitted. It might be contended that absence of crucial evidence is nothing but absence of an organ of cognition[2]. It does not require an elaboration to establish the proposition that nothing can be accepted as true, unless it is cognised by a legitimate cognitive organ. One might therefore argue that there is no case for acceptance of absence of crucial evidence as a novel phenomenon and consequently as a type of reasoning.

But this contention in spite of its plausibility must be dismissed with scant regard. True, absence of crucial evidence is symptomatic of the absence of valid cognition by a legitimate cognitive instrument. But they are not the same thing. One is rather the condition and the other is the result. Absence of crucial evidence strikes our mind first, and this leads to the conclusion that there is no cognitive instrument to certify the truth of the alternatives in question. It is fit and proper that we should accept absence of crucial evidence as the ground of our rejection of the competing alternatives, and we ought not to confound it as a case of default of a cognitive organ, which is rather the resultant discovery[3].

1 satpratipakṣahetvor iva nirddhārayitum aśakyānvayayoḥ parasparapratikṣepa eva paryavasānāt.

KhKh, p. 1319.

2 nanv evaṃ pramāṇābhāva eva doṣaḥ syān nā'vinigama iti cet?

Ibid., p. 1320.

3 tasyā'vinigamonneyattvenā'vinigamasy'aiva prathamotpannasy'opanyāsaucityāt.

Ibid.

(7) Empirical induction (*utsarga*)

When two contradictorily opposite predicates may be conceivable with reference to an identical subject on *a priori* grounds and the balance of logical proof is equally shared between them, it is the general tendency of the human mind to give preference to one of them, which is endorsed by experience as yet uncontradicted. This may be called empirical induction[1]. Take for instance, the proposition "Fire is hot". It is *a priori* conceivable that fire might be cold, and this possibility is not capable of being confirmed or rebutted by *a priori* logical proof. Though the logical necessity of hotness as a predicate of fire, and the logical impossibility of the predicate coldness cannot be demonstrated by means of pure logic and our only ground for belief in the proposition, "Fire is hot", is the testimony of experience, collective and individual, yet the belief cannot be lightly dismissed as an uncritical superstition on the basis of *a priori* grounds. It is an innate tendency of our mind to accept the truth of a proposition which is continually confirmed by experience, unless and until an empirical evidence contradicting the truth of it is encountered. These empirical inductions are capable of being ultimately traced to our belief in the Law of the Uniformity of Nature, though this belief is not susceptible of logical justification. It may be legitimately supposed that whatever happens in the universe has got a sufficient reason at its back. But this sufficient reason which can show its logical necessity may remain a sealed book to us, regard being had to the limitations of knowledge to which mankind is unfortunately compelled to remain subject. Only an omniscient spirit can have an illuminative insight into the ultimate secrets of Nature.

It is a pity that there have been philosophers who have made capital out of these human limitations, and have exploited them for justification of scepticism. Whatever might be the philosophical merits of scepticism as an attitude of mind, unqualified scepticism has not commended itself as an explanation of the problems of the world. The human mind has instinctively refused to be gagged into silence,

1 bāhulyadṛṣṭam apekṣya bāhulyadṛṣṭatayā durbalasyā 'nupagamārhato-'tsargaḥ.

KhKh, p. 1322.

or stifled into inactivity which is the necessary concomitant of intellectual death. The sane and healthy attitude should be acceptance of the testimony of experience as truth, provided we have convinced ourselves that there is no ground for believing it to be vitiated by a defect in the subjective and in the objective conditions of knowledge.

It is the recognition of this principle in British jurisprudence which allows the accused to be regarded as innocent, until and unless his guilt is brought home by indubitable evidence. It is again in conformity with this principle that the Mīmāṃsists of the Bhāṭṭa school in India accept all judgments to be true, unless a contrary evidence showing defect in the subjective apparatus or the objective conditions or a subsequent contradiction by another accredited experience presents itself to set aside their truth-claim[1]. The sceptics of the Buddhist school believe that all judgments should be suspect unless their truth is established by independent evidence. But this is scepticism *in excelsis*, and as we have observed before the generality of mankind looks askance at this attitude and believe it to be rather an aberration.

Let us now turn our attention to another contention that these empirical inductions are rather of the nature of doubt. They differ from pronounced cases of doubt in that the former beliefs are concentrated on one possible alternative, and not found to vacillate between two alternatives of equal strength like the latter[2]. But though the element of vacillation is not pronouncedly felt, these empirical inductions are at their best of the nature of doubt of an alternative of superior strength showing only a high degree of probability. But this contention seems more ingenious than convincing. It is an extreme view which puts uncontradicted inductions on the same level with doubt. In the first place, such inductions serve as positive evidence and doubt is rather in the nature of a disproof. In the

1 yaṃ tarkam etam ālamby āhuḥ :
tasmād bodhātmakatvena prāptā buddheḥ pramāṇatā/
arthānyathāttvahetūtthadoṣajñānād apodyate//
ŚV, p. 61. Quoted in KhKh, p. 1322.

2 nanu balavad-ekakoṭikaḥ saṃśaya evo' tsargas tat kathaṃ tarkaḥ syād iti cet?, KhKh, pp. 1322-23.

second place, doubt is an unsettled condition of the mind which oscillates like a pendulum between two competing alternatives, whereas an empirical induction is of the nature of the unilateral cognition of one of the extremes[1]. Nor need we attach undue importance to the modified scepticism of a section of philosophers who would rank these inductions with presumption. In presumption one of the alternatives is believed to be much more powerful than the other on account of the preponderant balance of evidence in its favour. But though it stands higher in rank than plain doubt, the possibility of the other extreme, however weak, is not entirely ruled out of court. The difference between doubt and presumption is thus one of degree and not of kind[2]. Empirical inductions on the otherhand are believed as veridical and the doubt created by philosophers is rather of the nature of after-thought. If premium be put on such indulgence in metaphysical doubt, there will remain very few beliefs which can claim immunity from its invasion. If the opponent seeks to decide the issue by appeal to psychological evidence, and differentiates between assured conviction and presumption by the criterion of psychologically felt doubt in one case, and exemption from it in the other, then this will not afford any advantage to the sceptic, because empirical inductions of the kind, we have been considering, will also lay claim to this prerogative, as psychologically speaking such beliefs are immune from the visitation of doubt in any manner or form[3].

Before bringing the present discourse to a close, we propose to advert to a trait which differentiates this type of reasoning from the other types. Empirical induction serves rather to prove a position by appeal to non-contradiction, and the rebuttal of the opponent's position is consequential. Such types of reasoning as infinite regress etc. are primarily directed to the refutal of the opponent's position and their cogency is derived from the contradiction involved in them. Non-contradiction is the main plank on which empirical induction relies for its cogency, whereas the other types depend upon the con-

1 ...utsargasy aikakoṭiniṣṭhatvāt saṃśayasya ca koṭidvayāvagāhitvāt.
KhKh, p. 1323.

2 *Ibid.*

3 *Ibid.*

tradiction arising from their application. The fundamental characteristic of reasoning operating as *reductio ad absurdum* is also present in it, since by proving its position it serves as an instrument of disproof of the opponent's plea indirectly[1].

We cannot help adverting to the enumeration of the types of reasoning as given in the *Sarvadarśanasaṃgraha*. It is a matter of regret that Mādhavācārya, the author of the work, has not explained the significance of any of these different varieties of reasoning. We find in the list the inclusion of *apavāda* (exception) as a special variety[2]. We do not know of any recognised authority of any school of Indian logic who has mentioned it as a variety of reasoning. We have ransacked all available sources and have incorporated our findings in this dissertation. It is imperative that we should not ignore the classification of the author of the *Sarvadarśanasaṃgraha* in view of its wide popularity. In this work there are given eleven types of reasoning, namely, (1) contradiction (*vyāghāta*); (2) self-dependence (*ātmāśraya*); (3) mutual dependence (*itaretarāśraya*); (4) vicious circle (*cakrakāśraya*); (5) the vicious infinite (*anavasthā*); (6) *tu quoque* (*pratibandī*, wrongly printed *pratibandhī*); (7) simplicity (*kalpanālāghava*); (8) complexity (*kalpanāgaurava*); (9) empirical induction (*utsarga*); (10) exception (*apavāda*); (11) impudence (*vaiyātya*)[3].

We have thrown ample light on ten varieties of reasoning, but the inclusion of *apavāda* has been a source of good deal of difficulty to us. We have been painfully constrained to conclude that the classification given in this work is rather slipshod and hasty. We do not see even a slight warrant for the recognition of *apavāda* as a variety of reasoning. The recent commentator MM. Vāsudeva Śhāstrī Abhyaṅkara has rather touched and let it go. He simply explains *utsarga* (empirical induction) as a general rule and *apavāda* as a special injunction which is to be taken as an exception to this general rule. It is well-known to students of grammar and Mīmāṃsā that these two terms go together as a pair of opposites. MM.

1 KhKh, p. 1323.
2 SDS, pp. 238-39.
3 *Ibid.*

Abhyaṅkara has only given the meanings which are current in these two systems of discipline. It is obvious from our exposition that *utsarga* has got a wider significance. *Apavāda* cannot be regarded as a variety of reasoning even by the widest stretch of imagination. It is most probably a slip of an unlearned scribe or a superficial student's emendation that is responsible for its inclusion in the enumeration of the types of reasoning. *Apavāda* or special injunction embodies an exception to the general rule and this exception is warranted by undisputed authority of valid cognition. It only shows that the jurisdiction of the general rule is valid only outside the sphere of exception[1]. It does not function as a *reductio ad absurdum* which is the essential characteristic of reasoning.

We have taken elaborate pains to demonstrate that even such recognised types of reasoning as simplicity, complexity etc. are not regarded as orthodox cases of reasoning by the later logicians on the ground of their failure to serve directly as cases of *reductio ad absurdum*. But as they serve to re-inforce the finding of an accredited cognitive organ, they have been regarded as species of reasoning in a secondary sense. We have also tried to show that they are not entirely devoid of the character of an invalidating agent, since they serve to weaken the presumption in favour of the opposite propositions by negative implication. But neither of these characteristics is found to be present in *apavāda*. It is for this reason that Śrīharṣa who has been very liberal in his recognition of the types of reasoning of varying degrees of strength has not cared to make room for *apavāda*, although its close association with *utsarga* is almost a truism. It is impossible to suppose that Śrīharṣa would not have cared to include it, had he not been impressed with the absurdity involved in it. Its omission in the inflated list given by Viśvanātha is also a proof of the futility of its claim to the status of reasoning. We feel compelled to reiterate our suspicion that the inclusion of *apavāda* in the list of the types of reasoning in the *Sarvadarśanasaṃgraha* is the outcome of an error of judgment, either of an uninformed

1 apavādaviṣayaṃ parityajya utsargo 'bhiniviśate.

A *paribhāṣā* of MB.

scribe, or of a hasty student who felt a natural temptation to make good what he considered to be an ellipsis.

(8) Complexity (*gaurava*) and Simplicity (*lāghava*)

These two types are complementary to each other and so will be treated together. When between two alternative hypotheses, one involves complexity and as such is difficult to understand and the other is transparent in simplicity and as such is easily intelligible, the former is liable to condemnation, and the latter is entitled to preference. The ground of preferance lies in its simplicity and that of condemnation in complexity[1]. It must be borne in mind in this connection that these two considerations are of value only when the balance of logical support is equally present. A theory ought not to be condemned merely on the ground of its complexity, if this complexity is entailed by logical necessity. Likewise simplicity by itself is not a virtue, unless it is shown to be adequate and justifiable by independent evidence. Complexity may be due to qualitative and quantitative consideration. When a fewer number of terms can account for a situation, the postulation of a larger number will constitute quantitative complexity[2]. Again, a hypothesis, which is hard to comprehend is liable to the charge of qualitative complexity, if a simpler hypothesis is available and found to be equally adequate. We find in the processes of the solution of the mathematical problems examples of these types of reasoning in abundant number. In philosophy the application of these types is quite frequent. The cosmological argument of the Naiyāyikas, proving the existence of one God as the creator of the world on the ground of its emergence as the product of a process, is supported by this type of reasoning. It has been contended by the opponent that if world be a product and as such should have an intelligent author, why should not a number of agents be postulated on the analogy of building of the houses etc.? The Naiyāyika meets this charge of the plurality of agents by appeal to this quantitative difference between complexity and simplicity.

1 sugamāsugamayor asugamadurbalattvaṃ kalpanāgauravam .... tadvyatirekeṇa kalpanālāghavaṃ sādhanānukūlam. KhKh, p. 1325.

2 *Ibid.*

The postulation of a plurality of agents is more complex than that of one. So the law of simplicity requires that monotheism should have preference over polytheism as a metaphysical theory[1].

The law of simplicity is wider and more comprehensive than the law of parsimony or Occam's razor, because the latter does not exhaust its scope. As we have observed that it has got both quantitative and qualitative forms and the law of parsimony is only an example of the quantitative form. On the qualitative side it differs from the law of parsimony. In pursuance of this law of simplicity we are compelled to discount supernatural factors and give preference to a natural explanation. Thus the explanation of a human malady by the agency of unseen evil spirits is not favoured, when a natural explanation of it by means of physiological disorder is found available. It should be always borne in mind that simplicity is used as a consideration in support of one's position and complexity is urged as a fault against the opponent.

The Naiyāyikas have distinguished three varities of simplicity from the corresponding cases of complexity. Simplicity and complexity may be (1) in respect of form (*śarīrakṛtam*), (2) in respect of presentation (*upasthitikṛtam*), and (3) in respect of relation (*sambandhakṛtam*)[2]. Extensity (*mahattva*) is propounded as the condition of perceivablity. Others put forward that the attribute of being inherent in more than one substance (*anekadravyasamavetattva*) is the condition of it (perceivablity). Extensity is lighter in form than 'inherence in more than one substance' and hence is preferred to the latter[3]. These two are the cases of formal simplicity and complexity.

It is a truism that an effect must have been non-existent before its production. Thus pre-negation (*prāgabhāva*) of the effect is a condition precedent of its coming into being. The production of odour is concomitant with the production of a colour as a matter of fact. So the production of odour must be preceded by the pre-negation of

1 KhKh, p. 1325.

2 laghutvaṃ ca śarīrakṛtam upasthitikṛtaṃ sambandhakṛtaṃ ca.
Din, p. 121.

3 tatra prathamam anekadravyasamavetatvāpekṣayā mahattve.
Ibid.

colour and the pre-negation of odour both, as a matter of necessity. Now, which of the two pre-negations should be held to be the condition of odour? It is maintained that the pre-negation of odour should be the condition of odour, because it presents itself readily to the mind, as in the enquiry of the cause of odour, the pre-negation of odour is more relevant than the pre-negation of colour. Here the simplicity lies in the promptness of the cognition of the pre-negation of the odour and complexity in the belated occurrence of the cognition of the other alternative (pre-negation of colour)[1].

Again a pen is the antecedent of writing. But the colour of the pen and the pen-universal are equally antecedent to it. Now which of the three, the pen, the colour, and the pen-universal should be regarded as the causal condition of writing? The answer is that the pen should be held as the condition of writing, and neither its colour nor the pen-universal, because the latter would make the causal relationship more cumbrous than the former. It is an accepted postulate of Inductive Logic that the cause and the effect must be intimately related and the effect should occur only where the cause is in operation. It is absurd that one throws a bomb in New York and a man is killed in London. The reason for this lies in the fact that the effect can occur in the place where the cause has occurred. Now, writing takes place in the piece of paper with which the pen is in contact. The co-existence of the pen at work and writing is easily intelligible and there is no difficulty in regarding the pen as the causal condition of writing, because of their co-relationship with the paper. If the colour of the pen or the pen-universal be sought to be made out as the causal condition, the relationship will be cumbrous, because the colour can be related to the effect through its inherence in the pen. The colour inheres in the pen and the pen is in conjunction with the paper in which the writing is done. So the relation will be inherence-cum-conjunction in the case of the pen-universal and the colour, whereas if we make the pen the cause of writing then the relation being simply conjunction is found to be less cumbrous. The

1 dvitiyaṃ gandhaṃ prati rūpaprāgabhāvāpekṣayā, gandhaprāgabhāve. gandhātmakapratiyogijñānasattvena śighraṃ tadupasthiteḥ. Din, pp. 121-22.

causality of pen is therefore admitted on the ground of this simplicity of relation. The case under consideration illustrates *relational* simplicity and complexity.

We have not said anything about the cogency of 'initial presentation' (*prathamopasthitatva*), which has been regarded as a variety of reasoning by some older logicians as it appears from the statement of Viśvanātha in the *Nyāyasūtravṛtti*. This has not attracted the attention of later logicians and thus goes unchallenged. It is an accepted convention that we should not reject what presents itself first unless there is strong evidence against it. It is based on the truth that nothing should be condemned unless there is strong reason for it. Accordingly, what appears first in the field as a claimant for consideration should not be brushed aside, but on the contrary ought to be accepted unless subsequent evidence invalidating its authenticity presents itself. It has not been regarded as a variety of reasoning by later logicians and their attitude is perfectly justified in view of the fact that it naturally reduces itself to a case of simplicity in respect of presentation which we have just treated of.

(9) Contradiction (*vyāghāta*)

It consists in the admission of co-existence of two mutually repellent attributes in a self-identical subject[1]. This admits of classification under three heads, namely, (1) contradiction in language (*svavacanavyāghāta*), (2) contradiction in action (*svakriyāvyāghāta*), and (3) contradiction in thought (*svajñānavyāghāta*)[2]. The proposition "My mother is barren" is an illustration of the first variety. Motherhood connotes the attribute of being productive of a child and barrenness on the contrary connotes the lack of such productivity. The opposition involved in the predication of productivity and non-productivity in respect of the same subject and in the same reference, is too obvious to require elucidation. The second variety is called contradiction in action. When a man actually asserts "I am dumb", he is guilty of self-contradiction by his own act. The very act of his

1 viruddha-samuccayo vyāghātaḥ. KhKh, p. 1292.

2 svavacanasvakriyāsvajñānavyāghātādidoṣarahitam... ATV, p. 533; *vide* also ATVD, p. 537.

assertion proves the falsity of the predicate "dumbness". It should not be confounded with contradiction in language in which the connotation of the subject and the predicate are mutually incompatible and the very assertion is suicidal and self-repellent. In the second variety the opposition of the subject and the predicate is not inherent in the proposition itself, but it becomes obvious when the proposition is actually articulated by the person. The articulation *qua* act brings out the contradiction. There is no contradiction involved in the proposition in the written form. So it is articulation which furnishes the contradiction. It is thus a case of extrinsic contradiction effected by an external act, whereas the opposition in the first variety is intrinsic. The third variety is called contradiction in thought. The following may be given as an example of it. When a man asserts and seems to think "I do not know *this pen*", he becomes guilty of contradiction in thought. The very contemplation or assertion of the object (*this pen*) presupposes the knowledge of it, and so the assertion of the lack of knowledge of the pen contradicts the assertor's knowledge of the same which is the presupposition of the assertion.

It should be clearly borne in mind that the pronoun or the pronominal adjective 'this' indicates direct intuition of it, and the assertion of ignorance of it is clearly a case of self-contradiction in thought. But for the pronoun 'this' the assertion would be perfectly innocuous. There has been an unbridgable gulf of difference between the monists of Śaṅkara's school and the philosophers of the dualistic persuasion regarding the meaning of the proposition "I do not know" or "I am ignorant of X". The former interpret it as proof of a positive fact, and the latter attempt to equate it with the assertion of lack of knowledge. In spite of this difference there is perfect unanimity on the point that the proposition is significant and not nonsensical or self-discrepant like the proposition "I do not know *this*". The self-discrepancy of the latter proposition lies in the employment of the pronoun 'this' which indicates direct perceptual cognition or in the language of Russell 'knowledge by acquaintance'. So the meaning of the proposition "I do not know *this*" turns out on analysis to be "I do not know what I directly perceive". This is clearly a case of what has been called self-contradiction in thought.

(10) Impertinence (*anaucitya*) *alias* Impudence (*vaiyātya*)

Impertinence is also called impudence. It consists in the employment of an issue which is condemned by philosophical convention, and is not capable of refutation or justification on account of its absurdity[1]. An honest error, though absurd is susceptible of refutation or correction, and as such it is not a case of impertinence. We can give some examples which will throw light upon its nature. Suppose a man multiplies question upon question interminably. If this process be not brought to an end, no discussion can be fruitful. It is therefore a recognised rule of debate that questioning should be confined to relevant issues. Irrelevant digression is a fault.

But the fault of impertinence is not constituted by irrelevant digression (*arthāntara*) alone. If one seeks to silence an obstinate arguer by the charge of irrelevancy, the latter may ask, "What is irrelevancy?" and each answer may again be made the subject-matter of a question. This interminable prolongation of the chain of debate can be arrested only if closure be applied to it. Impertinence is the ground of this application of closure[2].

Again, the question, "Is non-entity real or unreal?", is not fit for an answer. The assertion of reality is self-contradictory, and that of unreality, again, will involve the same issue, when it is considered that the subject or predicate of a proposition cannot be a fiction. The proper attitude with regard to such a question is contemptuous silence[3]. Again, if any one ask "Is the son of a barren woman in question beautiful or not?" it will be an instance of impertinence.

It might be argued that impertinence is not a distinct fault and it can be subsumed under one or other of the recognised types of logical defects. For instance, the interminable series of questions and answers is either subsumable under irrelevant digression (*arthāntara*) or infinite regress. And as regards the impertinence involved in the questions

1 prāmāṇikāvyavahāryatvam asamādheyajātiyam anaucityam vaiyātyanāmakam. KhKh, p. 1326.

2 *Ibid.*, p. 1327.

3 yathā 'vastuni vidhiniṣedhayoḥ kim icchasī'ti pṛcchati...atra sahṛdayānāṃ mūkatai'vo'cite'ti. *Ibid.*, p. 1326.

regarding non-entity or a barren woman's son, these are instances of self-contradiction. So where is the scope of impertinence as a separate fault?

But the necessity of recognition of impertinence as a separate category of fault will be apparent on reflection. It is no doubt a fact that impertinent questions of the types we have considered involve the faults shown by the critic. But it is not exhausted by this or that recognised type of fault. Suppose the proponent or the umpire convicts the arguer of self-contradiction. But the arguer may further ask the question, "What, sir, is self-contradiction?" Any answer that will be offered may again be made the peg of a further question, and so on to any length. If you urge that the attitude involves infinite regress, that also will not suffice to silence the man. So what is the remedy save and except the conviction of the arguer of impertinence? And thus can the final closure be applied to bring the debate to a termination.

It must however be borne in mind that the occasion for the application of this charge arises only when the questions are inspired by perversity or vitiated by absurdity. It has been observed by Paulsen that absurdity shares with truth the advantage that both cannot be refuted. Impertinence arises only when a question does not deserve an answer or even a refutation. The proper attitude towards it, as we have said, is one of refusal to answer it. But as silence is liable to be misunderstood as incapacity, the pronouncement of the verdict of defeat on the ground of impertinence is imperative on the part of the umpire who presides over the debate. Śrīharṣa has taken elaborate pains to establish the necessity of recognition of impertinence as a distinct type of *reductio ad absurdum* and he concludes his argument by citing the authority of Mahimabhaṭṭa who gives it a place of honour in the formulation of the types of literary defects in the *Vyaktiviveka*, an extraordinary work on literary criticism[1].

1 doṣaṃ Vyaktiviveke 'muṃ kavilokavilocane/
kāvyamīmāṃsiṣu prāptamahimā Mahimā" dṛta//

KhKh, p. 1327.

(11) Equalisation (*samavacana*)

Equalisation has been urged by Veṅkaṭanātha and his commentator Śrīnivāsācārya as a distinct type of *reductio ad absurdum*[1]. They maintain that it cannot be subsumed under *tu quoque* argument. The *tu quoque* argument consists in the allegation of the same or similar defect in the opponent's position, which has been urged by the latter against the proponent. Equalisation, on the other hand, does not rest on the allegation of a similar defect, but on the claim of a similar advantage. Thus it is urged that if the Absolute Brahman is to be accepted on the ground of its being supported by logical proofs, the reality of the phenomenal world too ought to be accepted on the similar ground of its being supported by incontestable logical evidence[2]. It acts as a *reductio ad absurdum*, because it establishes the untenability of the monist's contention that the world is a false appearance.

(12) Double noose (*ubhayataḥpāśā*)

Double noose is the same thing as dilemma. When an argument is shown to involve the opposite consequence by impaling it (argument) on the horns of a dilemma, the result is achieved by the application of this type of *reductio ad absurdum*. An example will illustrate the issue. The Vedāntic monist has established the unreality of the world. But the opponent asks "Is this unreality true or false ?" If this unreality be false, the reality of the world will be proved. If again it be true the truth of unreality will prove its reality and so monism will not be established[3]. Thus the argument is proved to be false whatever alternative of the two extremes of contradictory opposition be conceded. The double noose argument is the equivalent

1 NP, p. 347. See also Śrīnivāsācārya's commentary on NP, p. 347.

2 See Śrīnivāsācārya's commentary on NP, p. 347: yadi prāmāṇikatvena Brahmaṇaḥ satyatvaṃ syāt tulyaṃ prapañcasy'āpī'ti sāmyāpādanaṃ samavacanam.

3 See Śrīnivāsācārya's commentary on NP, p. 347: mithyātvaṃ mithyā vā na vā. yadi mithyā tarhi prapañcasya satyatvān na Brahmātiriktaniṣedhasiddhiḥ. yadi na mithyā tarhi tasyaiva satyatvena na Brahmātiriktaniṣedhasiddhir iti sambhāvitakoṭidvaye 'py aniṣṭāpādanam ubhayataḥspāśā.

TABLES OF CLASSIFICATION OF REASONING

(1) Udayana's fivefold classification — Table I

Reasoning (*tarka*)

- Self-dependence (I) (*ātmāśraya*)
- Mutual dependence (II) (*anyonyāśraya*)
- Vicious circle (III) (*cakraka*)
- The vicious infinite (IV) (*anavasthā*)
- *Reductio ad absurdum* (V) (*aniṣṭaprasaṅga*)

(2) Viśvanātha's reference to the five additional varieties of reasoning which can be tabulated as follows: — Table II

Table I plus

- Initial presentation (VI) (*prathamopasthitatva*)
- Empirical induction (VII) (*utsarga*)
- Absence of crucial evidence (VIII) (*vinigamanāviraha*)
- Simplicity (IX) *lāghava*)
- Complexity (X) (*gaurava*)

(3) Srīharṣa's elevenfold classification — Table III

- Self-dependence
- Mutual dependence
- Vicious circle
- The vicious infinite
- Contradiction. (*vyāghāta*)
- *Tu quoque* (*pratibandī*)
- Absence of crucial evidence
- Empirical induction
- Simplicity
- Complexity
- Impertinence (*anaucitya*) *alias* Impudence (*vaiyātya*)

(4) Tenfold classification in the *Vādivinoda* — Table IV

- Self-dependence
- Mutual dependence
- Vicious circle
- The vicious infinite
- *Reductio ad absurdum* as distinct from the first four varieties (*taditarāniṣṭaprasaṅga)*
- Absence of crucial evidence
- Empirical induction
- Complexity
- Simplicity
- Impertinence or Impudence

Varadarāja's and Saṅkara Miśra's classification as set forth in his commentary on the *Khaṇḍanakhaṇḍakhādya* is the same with Udayana

Classification of reasoning in Rāmānuja's school

(5) Veṅkaṭanātha's eightfold classification — Table V

- Self-dependence
- Mutual dependence
- Vicious circle
- The vicious infinite
- Pure *reductio ad absurdum* (*kevalāniṣṭaprasaṅga*)
- *Tu quoque*
- Equalisation (*samavacana*)
- Double noose (*ubhayataḥpāśā*)

Sub-division of the fifth variety in the *Prajñāparitrāṇa*

- Impossibility (*asambhava*)
- Opposition (*virodha*)

(6) Srīnivāsa's tenfold classification — Table VI

The same as Table V plus the two other varieties—viz. Complexity (ix) (*gaurava*) and Simplicity (x) (*lāghava*)

(7) Elevenfold classification of reasoning as found in the *Sarvadarśanasaṃgraha* — Table VII

- Contradiction
- Self-dependence
- Mutual dependence
- Vicious circle
- The vicio us infinite
- *Tu quoque*
- Simplicity
- Complexity
- Empirical induction
- Exception (*apavāda*)
- Impud[illegible]

of the dilemma of European logic with this terminological difference that whereas the two opposite extremes, between which the opponent is called upon to exercise his choice and the admission of either lands him in absurdity, are called nooses in Indian logic, they are called horns of the dilemma.

This finishes the dissertation on classification of reasoning and we now propose to deal with the conditions and fallacies of reasoning in the next chapter.

CHAPTER X

CONDITIONS AND FALLACIES OF REASONING

SECTION I

We have dealt with the classification of reasoning in the preceding chapter, and we now propose to deal with the essential conditions and factors of reasoning, the infringement of which severally and jointly gives rise to different fallacies of reasoning. These conditions and fallacies have been enunciated by Udayana in the *Ātmatattvaviveka*[1], and they have been codified by Varadarāja in the *Tārkikarakṣā*[2], and Śrīnivāsācārya in his commentary on the *Nyāyapariśuddhi* of Veṅkaṭanātha[3]. This shows that the importance of the matter has received continuous recognition since the time of Udayana, if not earlier. These conditions have been set forth under five heads: (1) The absence of rebuttal by a contradictory reasoning. In other words, it must be devoid of a rival. (2) There must be concomitance in agreement between the ground and the consequent. (3) The consequence entailed by reasoning must be an undesirable contingency. (4) The reasoning employed must not be conducive to the proof of the opponent's thesis. (5) There must exist concomitance in difference, that is to say, a necessary logical relation between the opposites of the ground and the consequent[4]. This is the most important factor inasmuch as it shows the fulfilment of the ultimate purpose of reasoning. Reasoning as we have observed, time and again, is at bottom a *reductio ad absurdum*. The exposure of the absurdity of the opponent's position inevitably entails the consequence that the truth lies in the opposite proposition. The failure of reasoning to culminate in the truth of the contradictory of the opponent's thesis stultifies the very purpose of reasoning.

1 ATV, p. 553.

2 vyāptis tarkāpratihatir avasānaṃ viparyaye/
aniṣṭānanukūlatve iti tarkāṅgapañcakam//

TR, p. 187.

3 See Śrīnivāsācārya's commentary on NP, pp. 348-50.

4 TR, pp. 187-88.

The default of any one of these five factors gives rise to five fallacies of reasoning which are named as follows: (1) mutual contradiction (*mithovirodha*); (2) the lack of logical sanction (*mūlaśaithilya*); (3) the establishment of an issue endorsed by the opponent (*iṣṭāpādana*); (4) to be helpful (in the proof of the opponent's thesis) (*anukūlatva*); (5) failure to culminate in the proof of the opposite (*viparyayāparyavasāna*)[1].

The first fallacy arises when a reasoning is set off by another reasoning, and the opposition of one reasoning by another is at bottom a case of mutual opposition. The second arises when the concomitance of the ground and the consequent is found to be lacking. As has been elucidated by Raghunātha Śiromaṇi, the pivotal condition of reasoning is the definite cognition of the necessary concomitance between the ground and the consequent and the admission of the ground in a subject. The lack of any one of these entails the lack of logical sanction[2]. The case is exactly on a par with inference. The essential conditions of inference are necessary concomitance of the probans and the probandum and the subsistence of such a probans in the subject. In other words, the major premise and the minor premise are the essential conditions of inference. In reasoning also the lack of either of these two premises which serve to demonstrate the necessary concomitance of the ground and the consequent and the assumed existence of the ground in the subject makes the employment of reasoning ineffectual, just as the lack of either of the premises in inference fails to establish the desired conclusion.

The third fallacy of reasoning consists in logical emergence of an issue which is not incompatible with the philosophical standpoint of the opponent. The reason why it is regarded as fallacious is the lack of the fundamental condition of *reductio ad absurdum*, namely, the proof of an issue which is detrimental to the opponent's position.

1 mithovirodhamūlaśaithilyeṣṭāpādanānukūlatvaviparyayāparyavasānais tarkābhāsatvāt.

ATV, p. 553; see also TR, pp. 188-90; NP, pp. 348-50.

2 mūlaśaithilyam, tarkasya mūlam āpādyāpādakavyāptiniścayāpādakābhyupagamau tacchaithilyaṃ tad anyataravyatirekaḥ.

ATVD, p. 557.

It is a case of labour wasted and serves to prove the arguer's logical ineptitude, since he has failed to discriminate between what is endorsed by the opponent and what is repudiated by him.

The fourth variety consists in yielding a point which tends to establish the position explicitly advocated by the opponent. The difference between the third and the fourth variety is a subtle one and is apt to be ignored. In the third variety, the arguer is found to lay stress on the emergence of an issue which is regarded by him as an unwelcome contingency from the opponent's point of view, whereas in reality it is not offensive to the latter. In the fourth variety also the issue shown to be entailed by the opponent's argument is also equally unoffensive. So in this respect the two varieties are not different. But the difference lies in the fact that in the third variety the issue shown to be logically entailed is without a bearing upon the thesis advocated by the opponent, though it is approved by the latter, as it does not run counter to his general philosophical standpoint. In the fourth variety, on the other hand, the issue shown to emerge is not only inoffensive to the opponent, but directly leads to the establishment of the conclusion which he contemplates to prove. So the difference is at bottom found to revolve round the question of what is relevant and what is not to the conclusion sought to be established. This distinction has got to be admitted though there is no express formulation of it in standard works, otherwise the two varieties would be lumped into one.

The fifth variety consists in the absence of concomitance in difference and the second variety arises from the lack of concomitance in agreement between the ground and the consequent. The two cases are similar in so far as they are derived from the lack of necessary concomitance. But the difference is fundamental, not only because of the difference between the positive and negative concomitance, but also because of the difference in the result. The lack of positive concomitance only serves to show that the reasoning has no *raison d'être*, whereas the lack of negative concomitance makes the reasoning inoffensive as a damp squib. It shows that the reasoning fails to serve its purpose which is to show that the truth lies in the proposition opposite to what is sought to be established.

The nature of these fallacies will be best elucidated by concrete examples. We therefore propose to illustrate these fallacies seriatim.

(1) Mutual contradiction (*mithovirodha*)

Let us take up the Sāṃkhya argument on causation. It is contended that a non-entity cannot be brought into existence by causal operation. A rabbit's horn is an example in point. If the effect in question were non-existent before the causal operation, it could never be called into existence, just as a rabbit's horn which is a non-entity is never found to be produced by any amount of exertion. The Sāṃkhya concludes that the effect was existent even before the application of causal activity. The Nyāya-Vaiśeṣika school of philosophers oppose this argument by means of the following argument: Whatever is in existence is not capable or in need of being produced, just as spirit (*puruṣa*) and primal matter (*prakṛti*) according to the Sāṃkhya philosopher. If the effect in question were as existent as spirit or primal matter even before causal operation, then the production of the effect in question would not be either possible or needful. Production is nothing but the bringing into existence of what was not in existence before. But if the effect were in existence, what would causal operation avail?

Now these two arguments directly contradict each other and as such both of them equally fail to establish the contention of each. The case is closely analogous to countermanded probans (*satpratipakṣa*). If we probe the question deeper, it would transpire that it is the self-same fallacy as countermanded probans, since the contradiction of one reason by another is the *raison d'être* of its being regarded as a fallacy. This is also the considered view of Śrīharṣa[1].

(2) The lack of logical sanction (*mūlaśaithilya*)

This fallacy arises, as has been observed before, if there is no necessary concomitance between the ground and the consequent. It is necessary concomitance which makes it possible for the ground or the probans

1 mithovirodhaś ca satpratipakṣatai'va.
KhKh, p. 1337.

to be determined by the consequent or the probandum. The former is the determinate and the latter is the determinant. So the relation of necessary concomitance is at bottom one of determinant and determinate. A can be the determinant of B, if A is necessarily concomitant with and so cannot occur without B. But if it is found on examination that the ground employed is not the determinant of the consequent and conversely the consequent is not the determinate of the ground, the reasoning which employs such a ground is condemned as fallacious on the ground of its being devoid of logical sanction. An example will make this obvious. "If the lake were possessed of smoke, it would be possessed of a jar". This is a typical case of the lack of logical sanction inasmuch as there is no necessary concomitance between smoke and jar and so the former is not the determinant and the latter is not the determinate. It is a case of plain *non sequitur*.

(3) The establishment of an issue endorsed by the opponent (*iṣṭāpādana*)

The Buddhists do not believe in the existence of a whole apart from and in addition to the constituent elements. The apparent solids such as the chair and the table are nothing but a conglomeration of atoms. In support of this position they employ the following reasoning: There can be no whole as a unitary principle. Because the admission of such whole makes it the substratum of co-existence of the contradictory qualities. Take for instance, a tree. It is a sheer plurality and cannot be a unity. A bird is found to perch on a branch of it, and the other parts of the tree are unoccupied. If the tree were one unitary whole it would be in conjunction and out of conjunction with the bird. Again, a table may be red in one part and not-red in another. It may be covered in one part and uncovered in other parts. The parts are different and distinct from one another. And so there is no contradiction involved in the situation. But the so-called whole being numerically distinct and different from the parts, and again being one simple unitary entity, is at once riddled with contradiction if you make it both conjoined and non-conjoined, covered and uncovered, coloured and uncoloured. The criterion of numerical difference is the possession of the contradictory attributes, and as this

criterion is found to be present in the so-called whole, it follows that it is not one but many. The whole is therefore *non est.*

The Buddhist further draws forth this implication by observing that the so-called wholes, chair, table etc. are not only not wholes, but also neither perceptible bodies nor imperceptible entities. It has been proved that the whole pervading the parts is logically impossible. It cannot, again, be maintained that the whole is an imperceptible entity, because that would contradict the plain verdict of experience. If it were imperceptible, it would not be perceived as such. But experience does not endorse any such intangible principle, and the advocate of the whole cannot point to any other independent source of knowledge outside perceptual experience. Experience, on the contrary, attests that the tree and the table etc. are perceptible facts.

The second contention of the Buddhist that the so-called wholes, the tree, the table and so on are not imperceptible entities, is endorsed by the Nyāya-Vaiśeṣika school which advocates the existence of wholes. The contention therefore yields an issue which is not only not inoffensive to the position advocated by the opponent, but is welcomed by him as a true estimate of the nature of the whole. The Buddhist therefore hurls a garland of flowers mistaking it to be a weapon of offence. Apart from rhetoric the reasoning employed by the Buddhists fails of its purpose to refute the thesis of the opponent.

(4) To be helpful (in the proof of the opponent's thesis) (*anukūlatva*)

Suppose the Buddhist, who does not believe in the existence of God, contends that if God were to be a real existent, then the Upaniṣads would have to be accorded the status of an organ of authentic knowledge. Now this contention would be an instance of the fallacy under consideration. It would not be strictly accurate to maintain that it is an instance of the third fallacy of reasoning, since the alleged consequence is unreservedly accepted by the theist. There is a subtle difference between the two cases. As has been observed before, the third variety consists in the establishment of a consequence which is directly endorsed by the proponent; whereas the fourth variety entails a consequence which is conducive to the

establishment of a fact which is advocated by the arguer. In the example given above, the proponent seeks to establish the existence of God by means of logic, and he is not directly concerned to prove the infallibility of the Upaniṣads. But the admission of the infallibility of the Upaniṣads would directly lead to the establishment of God's existence, which is the thesis of the proponent. It is logically sound and necessary that this variety should be distinguished from the third variety, since there is a qualitative difference between the results achieved by each of them.

(5) The fifth fallacy of reasoning is failure to culminate in the proof of the opposite (*viparyayāparyavasāna*). For example the reasoning "If the lake were possessed of smoke, it would abound in fish and weeds" is a case of this variety. It fails to be a *reductio ad absurdum*. The consequence alleged, namely, the abundance of fish and weeds is not calculated to invalidate the arguer's thesis, since it cannot be shown that the opposite proposition denying the incidence of fish etc. cannot be alleged to be true. In fact the most important and fundamental characteristic of reasoning is that it acts as *reductio ad absurdum*, that is to say, it ends in proving that truth lies in the contradictory of the proposition upheld by the arguer. In every case of reasoning and in each and every variety of it, this is the fundamental key-note, and the features which have been made the basis of this classification are but necessary concomitants of this fundamental character. It is a truism that in the third and fourth varieties of fallacious reasoning there is necessarily present the failure of culmination in the proof of the opposite proposition. But this does not mean that the third and fourth varieties are not independent instances of fallacious reasoning. There may be a coincidence of several fallacies in a particular argument, whether it be an independent inference or a parasitical reasoning. But this cannot annul the fallacious character of each. We may, for instance, show in the example given that the second and the third fallacy are also present and there is nothing repugnant in it. For the presence of one is not opposed to that of other fallacies.

Śrīharṣa in the *Khaṇḍanakhaṇḍakhādya* has enunciated another variety of the fallacy of reasoning, which he calls the unreality of the

subject (*āśrayāsiddhi*)[1]. We have seen that the logical ground (probans) in reasoning is invariably fictitious, but it is assumed on the admission of the arguer to show the absurd consequences, which logically follow from it. The present variety cannot be confounded with the unreality of the logical ground, because the subject is unreal in addition. For example, "If the sky-lotus were fragrant, it would be coveted by all", is an example of the unreal subject. Not only the ground, fragrance, is unreal but also the subject, the sky-lotus.

Section II

We have hitherto dealt with the different conditions and factors of reasoning, and have also shown how the infringement of any one of these conditions gives rise to several fallacies of reasoning. In order to make our treatment of the problem complete, we feel that it is imperative to consider again the different species of reasoning in order to show that the absence of the fundamental character of each makes them fallacious simulations of reasoning.

(1) Simulation of self-dependence (*ātmāśrayābhāsa*)

We have already considered the nature of self-dependence, and how it detracts from the probative force of the argument. But where it fails to invalidate the argument employed by the opponent, it has to be regarded as a false simulation. Self-dependence acts as an invalidating weapon when the same thing is found directly to depend upon its own-self in respect of genesis, subsistence and cognition. But where a thing is found not to depend upon its own-self, but upon another individual of the same class, it becomes a case of simulated self-dependence.

Let us consider an example of it. Knowability is a universal subsistent (*kevalānvayī*), and is bound to subsist in every knowable fact, and as such it subsists in its own-self also. Knowability is itself a knowable, just as a table or a chair is. So the attribute of knowability subsists in knowability itself exactly as the attribute of know-

1. ye ca paraiś tarkadoṣāḥ ṣaṭ svīkriyante āśrayāsiddhir anukūlatvam...*et seq* KhKh, p. 1336.

ability subsists in the chair. There is no difference between knowability and chair, so far as they are knowable and thus possessed of the attribute knowability. Now, Is this not a case of self-dependence in respect of subsistence? How can knowability subsist in its own-self? Apart from *a priori* logical consideration, the fact is undeniable that knowability is also knowable, and as such the attribute of being knowable belongs to it. What is then the solution? In reply it is asserted that there is no question of self-dependence here, because the knowability which is the substantive and the knowability which is the adjective are not the self-same individual. In the proposition 'knowability is knowable', the predicate can be paraphrased as 'possessed of knowability' and hence it may appear as tautologous. But there is no tautology in reality, because the subject is a specific individual determined by its specific reference, whereas the predicate is a universal attribute, which we shall show, is undetermined by any external objective reference. That a chair is knowable means that a chair is the object of knowledge, and that knowability is knowable means that it is also an object of knowledge. But knowledge in the two cases is not the identical individual.

Knowledge in spite of the common character of being knowledge subsisting in every instance of it differs according as it has reference to different objects. Thus the knowledge of a jar is different from the knowledge of a chair. In the case under consideration, namely, knowability, it is knowable because it is the object of knowledge having reference to knowability as its object. The knowability of the chair is different numerically from the knowability of knowability itself, because the terms of reference (i.e. the objects concerned, namely, chair and knowability) are numerically different. Thus there is no incompatibility in the knowability of the jar being itself knowable, because a knowledge of jar and a knowledge of knowability are two different individuals, and so the knowability of the chair is numerically different from the knowability of knowability. Knowability is nothing but the attribute of being a possible object of knowledge. And because the knowledge of one object, say chair, is different from the knowledge of another object, say table, the knowability of the chair is also numerically different from the knowability of the

table. When we say that knowability is the universal attribute of all knowables, we do not mean that the self-same knowability of the chair is an attribute of its own-self. The knowability of the chair is no doubt knowable and hence possessed of the attribute of knowability. But the knowability which is the attribute of *the chair* is not numerically the same knowability which is the attribute of *the knowability* of the chair. They are as different from each other as one man is from another man. The same man cannot mount on his own shoulder, but another man can. Though the mounter and the mounted are both men and belong to the same genus, there is no incompatibility in it, because the locus and the content are two different individuals. The situation is exactly similar in the case of knowability. When we say that knowability is an attribute of chair and knowability is an attribute of knowability we do not offend against either logic or factuality, just as we do not when we say 'man sits upon man'. There is no repugnance in the latter observation because the sitting man and the man sitted upon are not the same individual. Exactly also no exception can be taken to the assertion 'knowability is an attribute of chair and knowability is also an attribute of knowability'. Because the two knowabilities, one substratum and the other attribute, are not the self-same individual, but two distinct individuals. If it were meant that the knowability of the chair is numerically the same attribute as the knowability of knowability itself, the charge of self-dependence would be unanswerable, because the same thing cannot be the locus and content of itself. But as they have been found on examination to be different individuals the fallacy does not arise. We have found that knowability of an object differs from the knowability of another object, because of the difference of the knowledge-act, and one knowledge-act *qua* individual differs from another knowledge-act *qua* individual owing to the difference of the term of reference.

We cannot resist the temptation of adverting to a point which has become a bone of contention between a section of modern exponents of the Nyāya-Vaiśeṣika school and Madhusūdana Sarasvatī and his followers in connection with the problem of self-dependence. We have already alluded to the fact that knowability is a universal subsis-

tent (*kevalānvayī*). A universal subsistent is an entity which does not admit of negation in any context. Knowability, speakability etc. are regarded as universal subsistents by the Nyāya-Vaiśeṣika school and also by the Vedāntists subject to a qualification[1]. Now, there is nothing which can be said to be not knowable. Whatever might be posited as an instance would become by virtue of the very fact of its being affirmed, an object of knowledge. So knowability is a universal subsistent being present everywhere and because its negation is impossible in whatever reference. In order to make the definition of a universal subsistent comprehensive the Naiyāyika has added a qualifying adjective to 'negation' [of which the universal subsistent is affirmed to be the not counter-term (*apratiyogī*)]. The *prima facie* definition of a universal subsistent may be formulated as follows: "A fact which is not the counter-term of *absolute* negation is a universal subsistent". The term 'absolute negation'is necessary, because even a universal subsistent is the object of reciprocal negation (in the current terminology, numerical difference). Thus though 'knowability' is different from 'speakability', and as such is the counter-term of reciprocal negation yet it does not affect its character as a universal subsistent, because by its definition a universal subsistent is affirmed to be one which is not the counter-term of absolute negation (and not of reciprocal negation)[2].

1 The Vedāntist does not admit that pure consciousness is an object of knowledge. It is the eternal subject and can never be an object. To be precise it is pure consciousness undetermined as subject or object. Even in final realization of the Absolute Brahman, Brahman *qua* object is qualified however detachedly by the act of realization (*vṛttyupahita caitanya*). Unqualified Brahman is self-realized and becomes automatically qualified when there is anything external to it including the final act of realization.

2 The Nyāya-Vaiśeṣika school affirms four varieties of negation, viz. absolute negation (*atyantābhāva*), reciprocal negation or numerical difference (*anyonyābhāva*), pre-negation (*prāgabhāva*), and post-negation (*pradhvaṁsābhāva*). The negation of colour in air is an instance of absolute negation, because its negation is not relative to any place or time. The negation in question is thus absolute. The numerical difference of A from B is its reciprocal negation. It is the negation of the identity of two differents. The negation of the effect before its production is pre-negation It has no prior time-limit. It is there

We have so far shown the logical necessity and significance of each of the terms in the definition. But yet the definition is incomplete, because it fails to include many other universal subsistents. According to the Nyāya-Vaiśeṣika school eternal entities, such as space, time, ether (*ākāśa*), atom etc. are self-subsistent, because they do not stand in need of a locus for their existence. They are therefore styled non-residential reals (*avṛttipadārtha*). Since they do not exist in any locus in respect of any relation such as conjunction, inherence etc. their non-existence is universally present. Therefore the negations of these eternal entities are to be regarded as universal subsistents. But the definition, so far as it is worded, fails to include the negations of these eternal entities within its purview, because they cannot be regarded as the non-counter terms of absolute negation. Now the negation-of-space may be conceived as the counter-term of the negation of negation-of-space. This negation of negation-of-space is nothing but space itself, and so it cannot be contended that this double negation is a fiction. Negation of space therefore being the counter-term of a real negation cannot be included under the head of universal subsistents, though it being universally present cannot be denied this status of universal subsistent in spite of the definition. A definition must conform to the nature of reality and it is preposterous to suppose that reality is to be sacrificed in deference to a definition, however authoritative the quarter from which it may have emanated. The Nyāya-Vaiśeṣika logician realized this situation and therefore hastened to qualify the *prima facie* definition by the *proviso* 'that the negation must be resident in a locus' (*vṛttimat*). The negation of space thus, though it is the counter-term of negation,

from the very beginning of time, if we can say so. But it is not timeless like absolute negation, because it ceases to be as soon as the effect comes into existence. The genesis of the effect entails the cessation of pre-negation. The cessation of the effect is its post-non-existence. The prefixes 'pre' and 'post' have reference to the being of the effect. Post-negation has no posterior time-limit, because once it occurs there is no time subsequent in which it ceases to be. If post-negation were to cease at any subsequent time, the result would be the re-emergence of the effect. But a defunct effect is never revived. There is no resurrection of a thing which has perished. Only an eternal entity which does not admit of origin or death can subsist for all time.

does not fall outside the scope of the definition, because it is not the counter-term of a negation resident in a locus. The negation of negation-of-space, for instance, is not resident in a locus, because it is nothing but space itself which as we have shown does not exist in a locus.

We have already found that such attributes as knowability, speakability etc. are universal subsistents and the subsistence of these attributes in themselves does not involve the fallacy of self-dependence. Now there seems to have been a group of Nyāya-Vaiśeṣika philosophers who did not admit that self-dependence in respect of subsistence was a fallacy. According to them self-dependence etc. is a fault only in respect of genesis and cognition. But this is a clear case of prevarication and is nothing but a tactics of logical escapism. The sense of repugnance involved in the same thing being the locus and content with reference to its own-self is as pronounced as in the cases of self-dependence in respect of genesis and cognition. It is inconceivable that an acrobat however skilful can mount on his own shoulder. So self-dependence in respect of subsistence is to be condemned equally with that in respect of genesis and cognition as an absurdity. But we have shown that universal subsistents must be subsistent in every entity including their own selves according to the terms of the definition. If knowability etc. are to be universal subsistents, they must be shown to be subsistent in themselves also. Otherwise they must forfeit their claim to universal subsistence. We have shown that knowability etc. are subsistent in themselves and also how this self-subsistence does not involve any logical incompatibility.

Let us consider the conception of 'universal subsistent' of the Nyāya-Vaiśeṣika school and examine the definition formulated by them in order to find out how far it meets the requirements of the situation. This definition in spite of its emended form fails to account for the charge of self-dependence of knowability and the like in respect of subsistence. The Naiyāyika's assertion that self-dependence in respect of subsistence is not a defect is only an attempt to avoid a difficult issue. Madhusūdana Sarasvatī saw the situation squarely in the face, and has declared that self-dependence in respect of sub-

sistence is equally repugnant to logical sense, with self-dependence in respect of genesis and cognition[1].

We have already shown that knowability etc. are universal subsistents without any reservation, and their subsistence in themselves does not involve any incompatibility. The Naiyāyika's definition therefore requires a further emendation. The definition "A universal subsistent is one which is not the counter-term of absolute negation resident in a locus" succeeds in showing that negations of eternal entities are universal subsistents in spite of their being counter-terms of negation. But it fails to account for such recognised universal subsistents as knowability etc, in so far as they are subsistent in themselves. The following emendation will help us to cross the hurdle. This emended definition is formulated as follows: "The fact of being a universal subsistent is nothing but the fact of its being possessed of an attribute, which is not the determinant of the essential character of a counter-term of an absolute negation resident in a locus[2]."

We need not be apologetic for the apparent cumbrousness and complexity of the definition, though it may appear uncouth to the uninitiated. For the situation requires this complex definition, and close scrutiny makes it necessary. Let us now apply this definition to the disputed instances, knowability and the like. It is undeniable that knowability is bound to differ with the numerical difference of the knowable object. The knowable chair is numerically different from the knowable table and the 'knowability of the chair' is an attribute numerically different from the 'knowability of the table', so far as they are different individual facts. It is equally undeniable that 'the knowability of the chair' cannot subsist in itself in the relation of a content and locus, because the same thing cannot be its locus and content at the same time and in the same reference. Thus the 'knowability of the chair' is the counter-term of negation in its own-

1 yat tu prameyatvādau pramitatvād anyonyavṛttir adoṣa iti, tan na; ātmāśrayāditattva-doṣeṇa tatrā'pi pramitatvāsiddheḥ.

AS, p. 805.

2 atyantābhāvapratiyogitānavacchedakameyatvatvavattvāt.
See *Laghucandrikā* on AS, p. 805.

self in respect of subsistence and hence cannot be a universal subsistent. But this need not cause any difficulty, since the individual attributes 'knowability of chair' etc. are not regarded as universal subsistents. But though the individual attributes are not universal subsistents, this does not affect 'knowability as such', to be precise, knowability so far as it is possessed of the essential character of the attribute of being knowability without reference to the numerical difference of the individual cases of knowability due to the numerical difference of terms of reference. There may be an indefinite number of knowabilities *qua* the individual characteristics of individual knowables. But all these knowabilities do possess the universal common attribute which makes 'knowability' a knowability. Knowability in its universal reference is a universal subsistent, since it is not identified with the individual attributes, but is an attribute which typifies the universal character of knowability that belongs to every instance of it.

Now this universal knowability, that is to say, knowability which is understood as one embodying this universal character and which is not identical with this or that instance, which differs owing to the difference of terms of reference, exists in all cases of knowability. So knowability as such is a universal subsistent and subsists in its own self as well as the rest of knowables. This does not involve the fallacy of self-dependence in respect of subsistence as we have shown that such knowability is not confined to any individual instance. The difference of the terms of reference of the individual knowabilities only serves to make these individual instances numerically different, but does not affect the unity of the universal attribute of being knowability which is found to be present in all cases. We have shown that the 'knowability of knowability' is different from the 'knowability of the chair and the like', and so there is no question of the same thing being the locus and the content of itself in the same reference. But the consideration which makes knowability a universal subsistent is the fact that however much one may succeed in showing that the knowability of the chair and the knowability of the table are two different individual entities and the knowability of the knowability is a third individual, it is impossible not to take cognizance of the fact that all these different instances of knowability being themselves

objects of knowledge do share the character of knowability. The latter knowability is thus the universal characteristic of all. This universal knowability is an unindividualized concept, because it transcends the limitations entailed by the terms of reference. It is not this or that knowability, but is the essence of all knowabilities (*jñeyatvatva*). Hence this universal character being one identical principle, comprising all the individual instances of knowability within its range, and yet transcending them, must be held to be a universal subsistent. There is no question of self-dependence in regard to this universal knowability even in respect of subsistence, because it is different numerically and functionally from the different knowabilities in which it is immanent. Thus knowability *qua* knowability (*jñeyatvatvena jñeyatvam*) is both a transcendent and an immanent character, because it transcends the individual instances of knowability, in so far as they are circumscribed by their terms of reference, and yet it is immanent in all such cases, because its presence in each and all of them is undeniable.

To sum up. The knowability as determined by the terms of reference as the knowability of chair or the knowability of the table is not a universal subsistent. These are determinate characteristics of determinate objects and as such belong only to their respective terms of reference. The knowability which is a universal subsistent is a universal characteristic of all knowables and as such is undetermined by terms of reference, though it belongs to each of them. It can be determined only as an attribute which has the characteristic of being knowability (*jñeyatvatvena jñeyatva*). It is this attribute which belongs to all knowables including their specific knowabilities, which vary with the individual knowables. And because this universal knowability is different and distinct from the specific knowabilities, its subsistence in each and all of them does not involve the fallacy of self-dependence. It exists in all that exists—all things and their attributes including the attribute of knowability, which *qua* knowable is on the same footing with the substantives. It is numerically a self-identical characteristic, and because it is the qualifying adjective of all entities it is held to be a universal subsistent. It is immanent in all because it transcends each. The specific knowabilities of specific knowables

are however particular attributes subsisting only in particular instances. The knowability as the universal characteristic of all knowables is definable not in terms of their objects, but by its intrinsic character of being possessed of the attribute of being knowability. The knowability which has the character of being knowability (*jñeyatvatva*) is obviously distinct from an individual knowability which has the character of being the knowability *of a particular knowable*, say a chair or a table. It must be borne in mind that it is this knowability undetermined by its objective reference which is a universal subsistent.

We regret we have had to make this lengthy digression while examining the nature of self-dependence as a fallacy. But this was necessitated by the reluctance of a section of Naiyāyikas to regard self-dependence in respect of subsistence as a fallacy. We have found that this reluctance is unjustified and that self-dependence in respect of subsistence is as much a logical offence as it is in respect of genesis and cognition. We therefore assert that the position of the author of the *Nyāyāmṛta* denying self-dependence in respect of subsistence as a case of fallacy is untenable[1]. It is refreshing to observe that Rāmarudra, the author of the *Taraṅgiṇī*, the commentary on the *Dinakarī*, has recognised this truth and has adopted the same line of defence as Madhusūdana Sarasvatī[2] and Gauḍa Brahmānanda, the author of the *Laghucandrikā*.

(2) Simulation of mutual dependence (*anyonyāśrayābhāsa*)

The charge of mutual dependence becomes false when there is difference of individuals. It is true that a cognition when it becomes defunct leaves a trace or impression (*saṃskāra*) in the unconscious mind, which is revived in the form of a memory-act in the presence of a stimulant. This memory-act is a species of cognition. The latter cognition depends on another cognition for its genesis and thus the case might be urged as a case of mutual dependence. But the charge would be false, because the generator cognition and the

1 yat tu prameyatvādau pramitatvād anyonyavṛttir adoṣa iti.

AS, p. 805.

2 vṛttimadabhāvāpratiyogitvaṃ na kevalānvayitvam...kintu vṛttimadabhāvapratiyogitānavacchedakadharmavattvam eva tathā.

Rāmarudrī, p. 101.

generated cognition are two different individuals. Were it the case that the cognition which generated the memory-trace, and the cognition which is generated by the latter were a self-identical individual, the charge would be real. But as this is not the case the accusation of mutual dependence in respect of the instance cited, falls to the ground. This fallacy of reasoning is called simulated mutual dependence.

(3) Simulation of vicious circle (*cakrakābhāsa*)

The case is analogous with the previous one. A circular reasoning is vicious when the argument moves in a circle and culminates in showing that the cause and the effect, the locus and the content, the subject and object are identical. But if the individual cause and the individual effect are different, then this charge will not hold good. For instance, the seed produces sprout, the sprout produces the plant, and the plant produces the seed. Though the circle of cause and effect starts with the seed as the cause, and terminates in the seed as the effect, and thus is a closed circle, yet the charge of vicious circle cannot be brought home, because the seed which is the ultimate product, and the seed which is the initial cause, are numerically different. The charge of vicious circle against this statement of fact thus transpires to be a fallacious simulation.

(4) Simulation of the vicious infinite (*anavasthābhāsa*)

When the infinite series is legitimate and valid, the charge that it is vicious becomes an example of simulation of it. We have already discussed at length the nature of the infinite series and have found that there are two varieties, one legitimate and valid and the other illegitimate and invalid. For instance, when the relation of causality is firmly established between two terms independently of the past and future course of events, the mere fact that it is a link in the infinite chain of the cosmic process, does not make the causal relation between the terms under consideration invalid. We have already shown that the fallacies of reasoning beginning with self-dependence and ending in the infinite series, arise only when there is dependence of one situation upon others in respect of genesis, cognition, and subsistence. If there be no such dependence the fallacies become unreal. To take any instances of causal relation,

say the seed and sprout, it is not open to doubt that the seed is the cause of the sprout, and the sprout is the effect of the seed. But on further consideration it is found that the seed is also an event in time and as such must have a cause of its own, and that cause also cannot but be an event, because an eternally existent cause would produce an eternally existent effect. We know from experience that the seed which produces a sprout was produced in its turn by a sprout in the past, and the sprout again was produced by a seed. And if we continue our enquiry we shall find that the causal relationship is extended over the infinite past history of the cosmic process.

Furthermore, if we sedulously pursue our enquiry into the future course of the seed's history, we must find that the causal relationship of the seed and the sprout is bound to go on uninterrupted as in the past. Here history is found continually to repeat itself. This infinite series, both recessive and progressive cannot be regarded as an invalidating charge, because it does not make the causal relationship between the seed and the sprout unreal. It is true that the seed has an infinite history in the past, and will have an infinite career in the future, unless the vegetable world is to become extinct. But however exacting the attempt may be to understand this unceasing chain of causal relationship, it does not invalidate the relationship between a particular cause and a particular effect, because the particular cause does not depend upon the particular effect either for its genesis, or subsistence, or cognition. The fact that it depends upon another cause which is analogous to the effect does not make them mutually dependent, because each term in the series is numerically different from the other. But if it is found that a particular term cannot come into being unless a series of terms can be brought into existence, and this series is bound to be infinite and unending, then the charge of vicious infinite series will be legitimate.

(5) Simulation of *reductio ad absurdum* (*bādhitārthaprasaṅgābhāsa*) Reasoning, as we have defined it, must be a *reductio ad absurdum*. In other words, it must show that the opponent's position is absurd and the truth lies in the opposite proposition. This is the universal characteristic of reasoning. If it is found that

the consequence alleged by a reasoning to follow is not opposed to the position of the opponent, it will be a false simulation of reasoning. We need not regard it as a distinct species as it is the common characteristic of all varieties of reasoning.

(6) Simulation of contradiction (*vyāghātābhāsa*)

The proposition "The mother is barren" is an instance of contradiction. It is the most decisive weapon of refutation. But this contradiction may be relative. The woman who is barren may become a mother by virtue of medical treatment and so the contradiction between motherhood and barrenness need not be absolute. Thus the charge of contradiction, when one of the opposite characteristics ceases to exist, becomes a simulation of contradiction.

(7) Simulation of recrimination or *tu quoque* (*pratibandyābhāsa*)

The *tu quoque* argument becomes false, when the reason assigned by the opponent is shown to be untenable. Suppose for instance, the Vedāntist contends that the phenomenal world is unreal, because it is perceptible, and the dualist alleges that the concomitance of perceptibility with unreality is due to an unknown condition and so the unreality of the world does not follow. If the Vedāntist contends in reply that if an unknown condition makes the concomitance contingent, then no inference will be possible. Even the concomitance of smoke with fire may be urged as due to an undetected condition. This is a *tu quoque* argument and will remain valid if the opponent fails to establish that the suspicion of an undetected condition in the concomitance of smoke and fire is unfounded. If the opponent succeeds in showing the impossibility of the undetected condition, his refutation will remain valid, unless and until the Vedāntist shows the hollowness of the charge of undetected condition in his argument.

We have shown how reasoning in its different varieties fails to act as an instrument of refutation owing to the lack of one or the other of the essential elements and thus becomes fallacious. The fallacies of the recognised types of reasoning have been demonstrated with more or less elaboration. As regards the additional varieties of reasoning which have been recorded by Śrīharṣa and the logicians of Rāmānuja school, we have given an elaborate exposition of their nature. We do not propose to undertake an elaborate treatment of

the fallacies of these varieties, as in our exposition of the character of each of them we have given sufficient indication of the conditions which make them effective instances of refutation and it is obvious that the infringement of these severally and jointly will make them fallacious and ineffectual. Thus, Absence of Crucial Evidence will transpire to be fallacious if such evidence can be shown to be available. Empirical induction will be set aside by the discovery of a contrary instance. Complexity will not be a defect if it can be shown to be entailed by unimpeachable logical necessity and similarly simplicity will not operate as a helpful consideration and as a deterrent against the opposite theory if it is found on enquiry to be inadequate and based upon insufficient data. The charge of Impertinence or Impudence will fail to be brought home if the series of queries is inspired by an honest speculative demand. The charge of Equalisation will be ineffective if the claim of equal advantage can be shown to be false. The Vedāntist does not agree that the reality of the phenomenal world is established by incontestable logical proof and the claim of equal advantage is set aside by a powerful array of arguments. The fallacy of the Double Noose becomes apparent when it can be shown that the alternatives are not contradictorily opposed or that the predicates of the alternative propositions are repugnant to our logical sense. Thus the dilemma "Is unreality of the world true or false?" is vitiated by contradiction and hence cannot be entertained as a legitimate case of opposition. It is vitiated by a transparent sophism. Where the predicate is repugnant by its very nature to the connotation of the subject the dilemma is to be dismissed on the ground of absurdity.

The *raison d'être* of reasoning operating as a deterrent consideration against the opponent's position is that it operates as a *reductio ad absurdum*. It shows that the admission of a position entails the admission of an absurdity. If the consequence alleged to follow is found to be sanctioned by logical evidence and is not offensive to the opponent's standpoint and general philosophical persuasion, the reasoning becomes innocuous and this constitutes its fallacious character. The fallacy of a reasoning lies in the fact that it does not serve as a confutation which it claims to be. The proof of the falsity of its claim is the proof of its fallacy.

CHAPTER XI

REASONING *QUA* INSTRUMENT OF REFUTATION

In syllogistic argument the proponent first asserts a thesis and next assigns a reason in support of it. But this assignation of reason is liable to be vitiated by fourfold defect[1]. In the first place, the reason itself may be fallacious. For instance, the reason may be inconclusive or non-existent in the subject or contradictory. In such cases the argument fails in its purpose[2]. In the second place, the argument may be defective in respect of example in which the concomitance of the probans and the probandum is usually demonstrated. If the example is found to be destitute of the probans or the probandum or both, the concomitance of the probans with the probandum is not capable of being established, and hence the reason assigned will fail to establish the desired conclusion[3]. In the third place, the reason may be vitiated by a defective statement of the example. For instance, if the concomitance in agreement is not stated at all or stated in the contrary order in the example, the reason becomes defective because of the impossibility of the determination of the necessary concomitance[4]. In the fourth place, the argument may be assailed by a *reductio ad absurdum*, such as self-dependence, mutual dependence and the like[5].

If we look closely into the nature of these defects, it will be found that all the four varieties of defect are nothing but cases of fallacious reason (*hetvābhāsa*) and thus the fourfold classification of defects of

1 sādhanaprayogasya caturdhā duṣṭatvaṃ sambhavati.
NPa, p. 125. See also VV, p. 19.

2 hetuto yathā anaikāntikam ityādi.
Ibid.

3 dṛṣṭāntato yathā sādhanavikalam ityādi.
Ibid.

4 uktito yathā anupadarśitānvayaviparyayopadarśitānvayādi.
Ibid.

5 tarkato yathā ātmāśrayetaretarāśrayādi.
Ibid.

argument possesses only procedural and methodological importance and cannot be justified by reason of logical difference. Their ultimate logical value rests on the fact that they are all capable of being dissolved into one or other types of fallacies of reason.

So far as the first variety is concerned it is openly a case of logical fallacy. In the second type the defect of the example serves to show that the probans is not necessarily concomitant with the probandum. The demonstration of this defect by the opponent is tantamount to the assertion of the fallacy called the non-concomitant reason (*vyāpyatvāsiddhi*). The third type of defect consists in the non-statement or misstatement of necessary concomitance and since it fails to convince the opponent of the necessary concomitance of the probans and the probandum, it becomes equivalent to the assertion that the probans employed is lacking in necessary concomitance, and this is nothing but a case of the fallacy of non-concomitant reason. The third variety is thus on a par with the second.

Let us examine the logical value of the fourth defect. When an argument is rebutted by a *reductio ad absurdum* and the rebuttal stands unanswered, it only serves to show that the argument under review is guilty either of the rejection of an attested truth (*prāmāṇikaparityāga*) or the admission of an absurd position (*aprāmāṇikasvīkāra*). The rejection of an attested truth involves contradiction of logical proofs and the admission of an absurdity amounts to the confession of lack of logical sanction. These two defects will be found on examination to be nothing but cases of logical fallacy. The contradiction of logical proofs only shows that the probandum is non-existent in the subject and this is called the fallacy of contradicted reason (*bādha*). The lack of logical sanction implies that the probans is invalid either for the lack of relation with the subject, or lack of necessary concomitance with the probandum (*asiddha*). Thus the *reductio ad absurdum* only ends in showing the presence of either of the logical fallacies just mentioned. We may legitimately surmise that the omission of the demonstration of the classification of reasoning on the part of the author of the *Nyāyasūtra* and the scholiast Vātsyāyana was perhaps due to the recognition of the truth that the employment of a *reductio ad absurdum* is nothing but a way of demonstration of a logical

fallacy. A *reductio ad absurdum* serves to function as a weapon of confutation only because it derives its logical cogency from that of a logical fallacy and for this we need not postulate an independent basis. The logical value that a *reductio ad absurdum* possesses is borrowed from that of a logical fallacy of which it is only an indirect way of demonstration.

Śaṅkara Miśra in his work *Vādivinoda* has not recognised contradiction (*vyāghāta*) as a variety of *reductio ad absurdum* and this is in conformity with the views of Udayana and Gaṅgeśa[1]. *Reductio ad absurdum* is founded upon the necessary concomitance of the ground and the consequent and this concomitance if called in question would make resort to another *reductio ad absurdum* inevitable and the process has got to be repeated until all possibility of doubt of the necessity of the universal concomitance which is the basis of *reductio ad absurdum* is eliminated with final certitude. The final solvent of doubt regarding necessary concomitance cannot be a *reductio ad absurdum* which rather presupposes some other ultimate necessary concomitance as its condition. The charge of infinite regress is avoided by Udayana and Gaṅgeśa by the plea that the ultimate solvent of all doubt is contradiction (*vyāghāta*). Contradiction is a self-evident ultimate fact and does not depend on any other ulterior consideration for its validity. The contention of Śrīharṣa that contradiction depends for its validity upon another necessary concomitance is dismissed as a sophism on the ground that there is no psychological evidence of its ever being assailed by a doubt of its validity. Contradiction is thus the final arbiter than which nothing more ultimate is logically and psychologically conceivable[2]. Śaṅkara Miśra has regarded contradiction as the third variety of censure (*nigrahasthāna*) called contradiction of the thesis (*pratijñāvirodha*)[3].

1 vyāghāto 'pi na tarkaviśeṣaḥ kintu virodhanigrahasthānāntarbhūtaḥ.
VV, p. 19.

2 Cf. *supra*, chapter iii.

3 There are twenty two varieties of censure, recognised in the *Nyāyasūtra* of which the logical fallacies (*hetvābhāsa*) are the last variety. The difference between a logical fallacy and other types of censure lies in the fact that the latter indicate personal aberration and the former points to a logical defect. Personal aberration rather shows that the arguer is not endowed with the proper psychological discipline necessary for the successful tackling of logical problems,

The elaboration of the different varieties of reasoning and of the defects of the example is a later development in the logical speculations. There is not the slightest indication of these defects either in the *Nyāyasūtra* or in the *Bhāṣya* of Vātsyāyana. We have already observed that these defects are ultimately traceable to one or the other logical fallacy recognised by the author of the *Nyāyasūtra* and the innovations sponsored by later logicians have only a procedural value.

Now, a question has been raised. In view of the fact that the defects of an example and the defects entailed by a *reductio ad absurdum* are reducible to one or the other recognised type of logical fallacy, what would be the legitimate procedure in the demonstration of defect in the opponent's argument? The question is whether we should demonstrate the defect in the argument by specifying the logical fallacy involved, or by naming the type of *reductio ad absurdum*, or the specific defect of example. Should we for instance, point out that the example adduced by the opponent is defective in this or that respect, or that it involves a case of self-dependence and the like? Or should we name the fallacy involved by these defects directly and straightaway? The question is an intriguing one. If the defect is to be demonstrated by naming the logical fallacy involved, the elaborate discourse on reasoning and defects of example becomes pointless. Besides the convention of philosophers shows that the defects should rather be demonstrated by the specific enumeration of the type of *reductio ad absurdum* or of the defect of example. We find that this latter procedure has been followed in such an ancient and respectable work as the *Mahābhāṣya* of Patañjali.

Udayana expressly declares in his *Nyāyapariśiṣṭa* that though *reductio ad absurdum* and defects of example are in their essence cases of logical fallacies, the defects should rather be shown by the specific mention of the type of *reductio ad absurdum* etc.[1] There were other exponents of the *Nyāyasūtra* who held that the defects in question are not defects of reason, but should rather be regarded as additional

1 See NPa, pp. 125-26; see also VV, p. 37: ete doṣāḥ svaśabdenai'vo-dbhāvyāḥ, na tu hetvābhāsataye'ti...ity Udayanācāryāḥ.

instances of censure[1]. The admission that there are other varieties of censure over and above the twentytwo types expressly stated in the *Nyāyasūtra*[1], does not involve disloyalty to the author of the *Nyāyasūtra*, inasmuch as the aphorism may be legitimately regarded as illustrative and not an exhaustive statement of fact. We feel inclined to accept the interpretation of Udayana as the correct appraisal of the value of the *reductio ad absurdum* and of the defects of example. It does not seem to be fair to regard these defects as non-logical aberrations and we shall show immediately the close affinity and kinship of *reductio ad absurdum* with accredited inference. It seems to be a sound attitude to regard these defects as logical in character and Udayana has shown how these defects derive their capacity as instruments of confutation from the logical fallacies involved by them. When however the *reductio ad absurdum* or the alleged defects of example transpire to be false simulations, they should be included under the head of sophism (*jātyuttara*). To sum up: An authentic *reductio ad absurdum* is a case of logical fallacy and a spurious imitation of it is a case of sophism.

If we brush aside all considerations of allegiance to the tradition of logicians and set ourselves to examine dispassionately the logical value of reasoning as an instrument of confirmation and refutation, we cannot but admit the close affinity of reasoning with inference. The logical apparatus which makes inference possible is closely analogous if not identical with that presupposed by reasoning. The universal proposition and the minor premise are the conditions of inference and these very conditions are the presupposition of reasoning also. The essential difference between inference and reasoning is this. Inference presupposes a veridical cognition of the universal proposition and the minor premise, whereas reasoning proceeds from the opponent's assertion of the universal proposition and the minor premise as the data. The assertion of the opponent is not based upon veridical cognition and reasoning as a *reductio ad absurdum* seeks to prove that the

1 ete svatantrā eva doṣāḥ...nigrahasthānatvena boddhavyā ity anye.
VV, p. 37.

2 *Vide* NS, V. ii. 1.

admission of a false major or a false minor premise by the opponent compels him to endorse an absurd conclusion.

There is also a difference between inference and reasoning in the result achieved. Inference seeks to establish a conclusion and *reductio ad absurdum* seeks to prove the absurdity involved in the opponent's thesis. But this difference in the result achieved is irrelevant to the determination of the logical status of reasoning. As has been shown by the Mādhva logicians reasoning and inference stand on the same footing, because both derive their probative force from the major and the minor premises. The consideration that the minor premise is assumed in reasoning and is believed to be true in inference is rather the proof of a psychological difference and thus should be regarded as entirely irrelevant to the determination of the logical status of reasoning.

The truth of the conclusion in inference and the falsity of the conclusion in reasoning should only be regarded as the distinctive criterion of them. But this distinction can at most prove that they are two varieties of the same logical function and it should not be made the warrant for relegating reasoning to a different category.

Whatever may be the difference of views between the different schools of logicians regarding the ultimate status of reasoning, it is undeniable that it is exactly on a par with inference, so far as the conditions are taken into consideration. The infringement of the conditions in inference gives rise to different fallacies and the position is entirely analogous in reasoning inasmuch as the infringement of the conditions of reasoning also gives rise to similar defects which have been called false simulations of reasoning. But apart from the difference of nomenclature the intrinsic difference of the fallacies of inference from the fallacies of reasoning is not discernible. It would be rather fair and legitimate to maintain that they are essentially the same. Thus, for instance, the fallacies of reasoning, namely, the unreal subject, the lack of necessary concomitance and the establishment of a conclusion endorsed by the opponent can all be subsumed under the logical fallacy called the non-existence of the probans (*asiddhi*).

The Naiyāyikas propound three different varieties of the non-

existent probans, namely, (1) non-existent in respect of the subject (*āśrayāsiddha*), (2) non-existent in respect of necessary concomitance (*vyāpyatvāsiddha*), and (3) non-existent *per se* (*svarūpāsiddha*). The fallacy of reasoning called the non-existence of the subject is clearly a case of the first fallacy. The lack of logical sanction is not anything different from the fallacy of reason called 'non-existent in respect of necessary concomitance' (*vyāpyatvāsiddha*). When there is lack of necessary concomitance between the probans and the probandum, the probans fails to prove the probandum because of the lack of necessary concomitance between the two and when there is the same lack of necessary concomitance between the ground and the consequent the ground fails to entail the consequent for the self-same reason. The case is exactly similar but for the terminological difference, which is a creation of the logicians, that one is called by the name of 'the non-concomitant reason' and another by the name of 'lack of logical sanction' (*mūlaśaithilya*). As regards the fallacy of reasoning called 'the establishment of an issue endorsed by the opponent' (*iṣṭāpādana*) it is not different in kind and import from 'the proof of an admitted truth' (*siddhasādhana*).

When an argument ends in proving a conclusion which was not disputed by the opponent, it is said to be a waste of labour. It is of no use to seek to prove the obvious. This fallacy is not given a separate status but is regarded as an instance of subjectless reason (*āśrayāsiddha hetu*). The logical subject or the minor term must be one which is not known to be possessed of the probandum antecedently to the employment of the syllogism. This is called the essential character of the subject (*pakṣatā*) and is the universal condition of inference, subjective or syllogistic. If the opponent were already aware of the subject being possessed of the probandum and did not entertain any doubt about it, then the argument would end in proving a proved fact. The *raison d'être* of the fallacy lies in the fact that the subject of inference lacks in the essential condition that it must not be antecedently known to be possessed of the probandum. And this means that the logical subject is wanting and so this would be a case of subjectless reason or what is called 'a reason non-existent in respect of the subject'.

The fallacy of reasoning called 'the establishment of an issue endorsed by the subject' is exactly on a par with the fallacy called 'the proof of an admitted truth'. It should therefore be classed under 'the subjectless reason'.

As regards the fallacy of reasoning called 'mutual contradiction', it is not anything materially different from what is called 'the countermanded reason (*satpratipakṣita hetu*). When one reason is opposed by another reason and both are possessed of co-equal strength, both the arguments become ineffective. The result is the same when one reasoning is opposed by another reasoning of equal cogency. Thus this fallacy of reasoning is found to be the same as the fallacy of the countermanded probans because the principle of mutual opposition is present in them in the same fashion.

The Naiyāyikas have recognised the following three fallacies of reason, viz. (1) contradicted reason (*bādhita*), (2) contradictory reason (*viruddha*), and (3) non-concomitant reason (*savyabhicāra*). All these three fallacies are also possible in reasoning. We shall consider the question of contradicted reason last. As regards the contradictory reason it arises when the reason employed ends in proving the contradictory of the intended probandum. The fallacy of reasoning called 'the failure to culminate in the proof of the opposite' is exactly analogous to this. Reasoning seeks to prove that the opponent's position is wrong and by implication that the truth lies in the opposite proposition. When the reasoning fails to prove that the opposite proposition is true, it implies that the opponent's thesis is correct. The failure is due to the employment of a ground (*āpādaka*), which is concomitant with the opposite of the consequent. This is also the case with the fallacy of reason called the contradictory reason, which is so called because it proves the contradictory of the intended probandum, being concomitant with the opposite of the probandum. So they are not two fallacies, but one at bottom. As regards 'the non-concomitant reason' it arises from the lack of necessary concomitance between the probans and the probandum. The fallacy of reasoning called 'lack of logical sanction', which we have just considered, is exactly a case of this lack of necessary concomitance.

As regards 'the contradicted reason' it arises when the probandum is found to be absent in the subject by another uncontradicted organ of knowledge. The conclusion "Fire is cold" is an instance of it. The contradiction of the probandum by an independent source of knowledge proves that the probans employed is fallacious. In reasoning, the consequent entailed by the ground must be absent in the subject, otherwise it would not operate as a *reductio ad absurdum*. So the fallacy of the contradicted probans arising from the contradiction of the probandum cannot be a fallacy of reasoning. The orthodox Naiyāyika has drawn pointed attention to this difference between inference and reasoning which he regards as fundamental. And it is because of this difference reasoning in their opinion assumes an unreal character. We have shown in the exposition of the Mādhva standpoint how the charge of unreality is repudiated by the exponents of the Mādhva school of logic. The difference of views on the logical status of reasoning either as inference or as an independent organ has been elaborately considered by us. But we do not bank upon this disputable basis in our attempt to show the kinship of reasoning with inference. Whatever may be the differences of philosophers regarding the ultimate logical status of reasoning it is indisputable that the kinship of reasoning with inference is intimate and profound.

As regards the fallacy of the contradicted reason it is not the case that there is no corresponding fallacy of reasoning. It must be admitted that all cases of reasoning are not cases of *reductio ad absurdum* in the sense of directly aiming at negative results. Empirical induction is a variety of reasoning and we have shown that its finding is positive. And those who think that reasoning culminates in the creation of presumption are bound to admit that reasoning acts as a positive organ also. Here contradiction will be fatal to reasoning. So the three bases of logical fallacies are found to be present in fallacious reasoning also.

There are some logicians who allege another fallacy of reasoning called 'equality of consequences', when mutually opposed consequences can be alleged to follow from a position advocated by an opponent. It will show that the objection of the opponent is met by a counter-objection and the absurdity alleged is common to both the parties.

We may regard it without offence to logical propriety as a case of mutual opposition, which is a recognised fallacy of reason (*satpratipakṣitatva.*)

The close kinship of the fallacies of reasoning with those of inference, which we have shown, should create a presumption in favour of the position that reasoning is rather a case of inference. The Mādhvas have proved their identity and barring the differences we have shown, which are more psychological than logical, there is no very convincing reason why reasoning should be denied the same or similar logical status with inference.

CHAPTER XII

A CRITIQUE OF REASONING

The development of logical speculations in the school of Navyanyāya is indebted to a prodigious extent to the hostile criticisms of Śrīharṣa of the Nyāya concepts in that bewildering work known as the *Khaṇḍanakhaṇḍakhādya*. The predominant interest of this work lies in destructive criticism of the realistic categories. It is the postulate of the philosophers of the Nyāya school that reals are knowable and the knowledge of these reals can be definitely set forth in definitions. From the very beginning of Nyāya speculations as recorded in the *Nyāyasūtra* and Vātsyāyana's *Bhāṣya*, not to speak of the supplementary literature which gathered round these two basal works in the form of exegesis, we find that tremendous importance has been attached to definition as the initial focus of logical elaboration.

Śrīharṣa who flourished in the 12th century A.D. took upon himself the task of exposing the hollowness of the pretensions of the logicians of the Nyāya school that the phenomenal objects have got well-defined logical character, each distinct and different from one another and that these characters can be exhaustively analysed and intelligibly formulated in verbal propositions.

Śrīharṣa's critical evaluation of the problem of reasoning as a logical weapon deserves serious consideration and we address ourselves to this task, although we are painfully conscious of the fact that it may result in upsetting the whole fabric that we have built in the preceding chapters. Our apology is this. We have set ourselves the task of evaluating the logical speculations of the different schools of philosophy on reasoning as a logical category and we might run the risk of being accused of partiality or prejudice or inadequacy at any rate, if we omitted the consideration of Śrīharṣa's views on this subject. This omission might also be interpreted as the tactics of a shirker who deliberately omitted a difficult task. Whatever may be the verdict of scholars who would honour my work with a perusal, I felt that this omission of the evaluation of Śrīharṣa's speculations on reasoning

would be a drawback, so far as the thoroughness of the exposition is concerned. I am aware of the difficulty of the task and the intractability of Śrīharṣa's language and thought. But I am making an honest attempt in explaining Śrīharṣa in a language which I shall try my utmost to make intelligible to the modern mind. It must be recognised that however one may try to make understandable the treatment of an abstruse problem, one cannot hope to be successful, unless critical reflection is brought to bear upon it by the student concerned.

Reasoning is defined to be the logical entailment of the determinant concomitant (major term or the consequent) with reference to a person who endorses the determinate concomitant (middle term or the logical ground). Logical entailment is interpreted to be the logical necessity of admitting the consequent. But this definition is too narrow.[1] The logicians of the Nyāya-Vaiśeṣika school admit two types of reasoning, viz. (1) consisting in demonstrating an illogical issue, necessarily following from the position admitted by the opponent with a view to refutation: in one word it is the type of reasoning called *reductio ad absurdum*. (2) There is another type which consists in stating a hypothetical possibility which is however based upon necessary concomitance of two facts. For instance, a hungry and thirsty traveller is found to make such assertions, "I could satisfy my hunger, if there was a confectioner's shop at hand", or "I could allay my thirst, if I could get a glass of ice-cream to drink". These assertions are of a hypothetical nature and are regarded by the logicians as a species of reasoning. Obviously these assertions do not aim at the refutation of a position and so the definition of reasoning under consideration which applies to *reductio ad absurdum* does not cover these hypothetical assertions in spite of the fact that they are regarded as authentic illustration of a species of reasoning. This is the first charge against the definition given that it fails to meet the requirements of the two types.

The lack of a common definition is not the only defect. The definition as worded is also too wide. It applies to the case

1 abhyupagatavyāpyaṃ prati vyāpakaprasañjanaṃ saḥ tatprasañjanaṃ ca svīkārārhatābodhanam iti cet? na, avyāpteḥ......KhKh, pp. 1276-77.

of fallacious reasoning called the entailment of an issue endorsed by the opponent (*iṣṭāpādana*)[1]. To the opponent who admits the truth of both the determinant and the determinate concomitants such entailment will be a case of wasted labour. To take a concrete illustration. Suppose the opponent does not dispute that the smoking hill is possessed of fire, yet the proponent argues, "If you think the hill to be devoid of fire, you must admit it to be devoid of smoke also". The opponent does not deny the existence of fire and so the entailment of the absence of smoke on the supposed denial of fire does not affect the position of the opponent and thus fails to be a *reductio ad absurdum*. In order to avoid this contingency the logicians may propose to add a qualifying *proviso*, namely, 'who does not endorse the determinant concomitant'. The definition would therefore be 'the entailment of a determinant concomitant with reference to a person who endorses the determinate concomitant, but does not endorse the determinant concomitant'. But even this amendment will not be free from difficulty[2]. Suppose the opponent admits the determinate concomitant, the presence of smoke, but does not admit the presence of fire,—yet the entailment of fire on the ground of the presence of fuel, which is not necessarily concomitant with fire, would be a case of valid reasoning in terms of the definition, although it is not entitled to it. In order to escape the predicament the definition may be further proposed to be amended by the insertion of the clause 'by means of a determinate concomitant'. But this also will not stand scrutiny, because of the dilemma[3]: (1) "Does it mean that the determinate and the determinant concomitants are respectively admitted and declined *per se* without reference to the relation of necessary concomitance which factually subsists between them? (2) Or does it mean that the acceptance and denial have reference to their character as determinate and determinant in concomitance[4]?"

1 iṣṭāpādane'pi gatatvāc ca. KhKh, p. 1277.

2 anabhyupagatavyāpakam ity api'ti cet? na. *Ibid.*

3 vyāpyen'ety api kāryam iti cet? na. vikalpāsahatvāt. *Ibid.*

4 kiṃ paramārthato vyāpyavyāpakabhāvavyavasthitayoḥ svarūpeṇeṣṭā-niṣṭatvam uta vyāpyavyāpakayor bhāvena tat ? *Ibid.*

The first alternative is not tenable. Suppose the opponent admits the presence of smoke, but declines the presence of fire, because of his ignorance of the necessary concomitance of smoke with fire, though it is a fact that the concomitance is true. In this situation the entailment of fire on the presence of smoke with reference to the opponent would pass for a genuine *reductio ad absurdum*, although it ought not to do so, because the opponent will remain unconvinced and so will not be compelled to admit the consequent. Smoke is known by the opponent as smoke and nothing more and fire is known only as fire and not *qua* determinant concomitant. The entailment of fire by means of smoke will be as ineffective as the entailment of any other circumstance, say a pen, because the compelling consideration in the shape of necessary concomitance is absent with regard to him. The result will also be the same if the terms were known reversely as determinate and determinant. For instance, if smoke were known as determinant and fire as determinate, the entailment of fire on the ground of smoke would fail to produce conviction. These cases cannot be regarded as *reductio ad absurdum*, because the necessary concomitance is not endorsed by the opponent for whose conviction the *reductio ad absurdum* is applied. The factuality of the concomitance will not make it a case of reasoning, unless it is driven home to the opponent by an independent argument. The success of the *reductio ad absurdum* invariably hinges on the production of conviction in the opponent of the necessity of admission of the consequent following upon the admission of the ground. But this can be achieved only if necessary concomitance can be proved to be factually present. It is on the proof and conviction and not the mere presence of necessary concomitance that the success of *reductio ad absurdum* depends[1].

The second alternative will also be found to be in the same predicament. The definition as amended stands as follows: "Reasoning is the entailment of the determinant by means of a determinate known as such with reference to a person who endorses the determinate but does not endorse the determinant". But it overlaps the fallacious

1 KhKh, p. 1277.

reasoning called suicidal (*pratikūlatva*) which arises when the consequent entailed is hostile to the position of the proponent himself. Take for instance the following argument in which the proponent and the opponent both endorse the determinate *qua* determinate, but equally repudiate the determinant *qua* determinant. Suppose for instance, that the Naiyāyika employs the syllogism against the Mīmāṃsist: "All that is believed or known or asserted as existent is necessarily possessed of the universal 'existence'. 'Existence' is also believed or known or asserted as existent. ∴Existence must also be possessed of the universal 'existence'." In this argument the ground, 'the assertion of existence', is admitted to be true by both the proponent and the opponent, but the consequent is equally denied by them. It thus satisfies the requirements of the definition of the *reductio ad absurdum* in full. But it cannot be a case of *reductio ad absurdum*, because the consequent entailed cannot be regarded as true by the Naiyāyika himself, because he does not endorse the presence of the universal in 'existence'. It thus transpires to be a suicidal argument and a false *reductio ad absurdum*, although the definition applies to it[1].

The opponent may argue: "Well, the situation can be averted by qualifying the phrase 'by means of a determinate' by the adjective 'not endorsed as such by the arguer himself'[2]. In the argument just considered the determinate is accepted to be true by both the parties. The definition now amended does not apply to it and hence there will be no difficulty." But the definition will be too narrow, though it succeeds in avoiding the charge of undue extension. Take for instance, the following argument:

"All objects of knowledge are objects of perception.
Merit and demerit are objects of knowledge.
∴ Merit and demerit are objects of perception." It is a case of valid reasoning, because the middle term is accepted and the major

1 KhKh, p. 1280.

2 svayaṃ vyāpyatayā'niṣṭene 'ty api viśeṣaṇīyam iti cet?......
Ibid.

term is denied by the opponent. The Naiyāyika believes that even such humanly imperceptible entities as merit and demerit are objects of intuition to God and mystics. The proposed amendment of the determinate 'as not endorsed by the arguer himself' would make the definition inapplicable to the instance just considered, since the determinate is endorsed by the arguer also. It is certainly a case of valid reasoning and so the failure of the definition proposed to apply to it is the fault of the definition.

The opponent may contend that the definition should be stated as follows: "The entailment of the determinant by means of the determinate admitted by the opponent but not endorsed by the arguer alone is a *reductio ad absurdum* with reference to the opponent who does not admit the determinant, provided the determinant is not repudiated by the arguer himself"[1]. This definition will not overlap suicidal reasoning, since the *proviso* is absent in the latter, in which the determinant entailed is necessarily repudiated by the arguer also. It will not fail to apply to the reasoning entailing the perceptibility of merit and demerit on the ground of the determinate being not endorsed by the arguer as such by himself. The meaning of the clause 'not endorsed by the arguer himself' is 'not endorsed by the arguer alone', that is to say, the determinate in reasoning should necessarily be endorsed by the opponent.

But this amendment too will not save the definition from the charge of narrowness, since it will fail to include the following case of valid reasoning: "Had there been a jar in existence here, it would have been perceived". The determinant, perception of the jar, is not endorsed and the determinate 'the existence of the jar' is endorsed by the arguer. The absence of the *proviso* stated in the definition in the case places it beyond the range of the definition. It may be suggested: "Let the determinate be qualified as 'one not admitted by the arguer to be actually existent'. In the argument under review the jar is not believed to be actually existent by the arguer and so the definition

1 atha svayam aniṣṭavyāpake svayaṃ vyāpyatay'eṣṭena yau na bhavati tatrānabhyupagatavyāpakaṃ paraṃ prati parābhyupagatena vyāpyena vyāpaka-prasañjanaṃ tarkaḥ.

KhKh, p. 1280.

would be applicable". But even this amendment will not succeed in saving it from exposure to the charge of over extension to a case of reasoning which fails to culminate in the proof of the opposite proposition[1]. To take a concrete example. The Naiyāyika propounds this *reductio ad absurdum* against the Vedāntists: "If the Absolute Brahman were to be known from the Vedic text, it would not be self-revealing like the sacrifices known from it". The definition as amended would apply to it, although the Naiyāyika does not endorse the universal proposition implied, namely, that which is self-revealing is not known from the Vedas alone. Here the determinate 'to be known from the Vedic text alone' is not endorsed by the Naiyāyika as actually existent. But it cannot be an instance of valid reasoning, since it does not end in proof of the opposite inasmuch as the Naiyāyika does not endorse the universal proposition, "What is self-revealing cannot be known from Vedic text alone", the concept of self-revealation being entirely repugnant to the Naiyāyika. The Naiyāyika might propose to qualify the determinate by the clause 'which leads to the proof of the opposite'[2] in order to escape the predicament.

But this too will not make the definition free from defect. It would fail to cover those cases of reasoning which are employed entirely for the purpose of the confutation of the opponent on the basis of a determinate admitted by the opponent alone. The arguer in this case does not believe in the necessary concomitance of the determinate and the determinant concerned, and so the proof of the opposite does not follow as a consequence. An example may be cited. The Naiyāyika seeks to repudiate the conception of Absolute Brahman by the following *reductio ad absurdum*: "If the Absolute Brahman were the material cause of the universe, it would be liable to transformation". It is regarded as a valid *reductio ad absurdum* by the Naiyāyika, though it cannot lead to the proof of the opposite, since the Naiyāyika does not believe in the opposite concomitance,

1 evambhūte eva viparyayāparyavasāyini gatatayā 'tivyāpakatvāt.
KhKh, p. 1280.

2 viparyayaparyavasāyine'ty api prakṣepyam iti cet?
Ibid., pp. 1280-81.

namely, 'that which is not transformable is not a material cause'. The Naiyāyika believes that *ākāśa* is the material cause of the sound, although it is not liable to transformation[1].

It may be urged by the Naiyāyika that an argument which is not capable of culminating in the proof of the opposite as truth cannot be an instance of genuine *reductio ad absurdum*. It is at most a case of opposition[2]. But this defence is a device of escapism. The essential character of *reductio ad absurdum* consisting in the entailment of a consequence unacceptable to the opponent on the basis of a determinate admitted as such by him is present intact. What is essential to *reductio ad absurdum* is the refutation of the opponent's position and the culmination in the proof of the opposite or otherwise is a consequence of no logical importance. The proof of the opposite conclusion possesses logical value, because it is a case of opposition. It is illogical to think that culmination in the opposite is an essential condition and so the repudiation of *reductio ad absurdum* on the ground of this failure is entirely unjustifiable. The difference of the types of reasoning, one leading to the proof of the opposite and the other standing on opposition alone can at most be regarded as a variation in the theme of opposition. The former type only shows that the admission of a false determinate leads to the contradiction of an established truth and the latter shows that the admission of the determinate makes the admission of the unacceptable determinant inescapable. In both cases the admission of a consequence denied by the opponent is shown to be inevitable.

The denial of the status of reasoning to hypothetical assertion (*sambhāvanā*) on the ground of its failure to lead to the opposite conclusion is equally unjustifiable. What is essential in reasoning is that the admission of the determinate is made the ground of the necessity of the admission of the determinant. It is inessential to insist whether the admission of the determinate on the part of the opponent is based on the actual presence of the determinate, or on the actual concomitance of the determinate and the determinant, for the

1 KhKh, p. 1281.

2 sa prasaṅga eva na bhavati virodhamātraṃ tad iti cet?

Ibid., p. 1283.

purpose of the *reductio ad absurdum*. The objective of such a restriction is to show that the *reductio ad absurdum* must lead to the establishment of the opposite conclusion. But this is logically unnecessary. The *reductio ad absurdum* is possible even on the basis of the admission of the necessary concomitance by the opponent[1]. The admission may be based on objective truth or a false belief. What the *reductio ad absurdum* seeks to emphasise is that the admission of the determinate makes the admission of the determinant logically irresistible, in spite of the fact that the determinate is not objectively present or the concomitance between the determinate and the determinant is a matter of subjective belief. The *reductio ad absurdum* which consists in showing the necessity of entailment of the determinant inadmissible to the opponent on the ground of the opponent's admission of the determinate may not be based on objective truth. The objective truth of the concomitance of the determinate and the determinant is not essential to *reductio ad absurdum*, but the belief of the opponent. It is evident from the consideration that the objectivity of the necessary concomitance unknown and unbelieved by the opponent makes ineffectual the employment of reasoning. It is necessary that the necessity of the concomitance should be realised by the opponent, otherwise it will fall as a damp squib upon him[2].

It shows slipshod thinking when the logician insists upon both the objective truth of the necessary concomitance and the admission of the same by the opponent as the essential condition of the *reductio ad absurdum*. What we have shown is that what is necessary is the admission alone and the objective truth is irrelevant, because the objective truth so long as it remains unrealized gives no advantage either way. The culmination in the opposite conclusion is only symptomatic of the absurdity of the opponent's position, which has already been driven home by the entailment of the determinant. Now the sceptics such as the Mādhyamikas have relied on *reductio ad*

1 paramārthato vyāptyabhāve 'pi parābhyupagamam ādāya prasaṅgapravṛtter upapatteḥ.

KhKh, p. 1283.

2 *Ibid*, pp. 1283-84.

absurdum as the weapon of confuting the positions of other philosophers. The Mādhyamika philosopher does not believe in the reality of anything, objective and subjective both. He has adopted a peculiar position in logic, namely, to accept the arguments of the opponents at their face value, and to apply to them the logical tests which are accepted by the latter. He shows that all the doctrines of philosophers are found on examination to be vitiated by self-contradiction by means of the logical apparatus adopted by them. But the refutation of a particular position does not commit him to the admission of the opposite alternative, because in pursuance of his negativistic philosophy he does not believe in the truth of any position. And certainly logically speaking there is no reason to take exception to the position of Nāgārjuna. He adopts *reductio ad absurdum* as the only instrument in his criticism. But he does not think that the denial of one position will lead to the affirmation of the opposite, if it is found to be riddled with self-contradiction like the other. It must be admitted that the *reductio ad absurdum* so far as it is employed for the refutation of the opponent's position does not involve commitment to the opposite of what is refuted.

But *reductio ad absurdum* when employed for the establishment of a particular position necessarily leads to the acceptance of the opposite truth. In such a case the failure to culminate in the opposite conclusion is a real drawback[1]. To take a concrete example. The Buddhist fluxist seeks to establish the position that all existents are momentary, because existence means causal efficiency. And causal efficiency is exercisable in succession or non-succession which are not possible of a non-momentary real. He certainly believes in the objective concomitance of existence with momentariness. And he can establish this concomitance by showing the impossibility of the concomitance of causal efficiency with the non-momentary. And this can be effected if the Buddhist can show that the non-momentary is non-existent, because it cannot be possessed of causal efficiency. Thus the Buddhist fluxist has to prove the concomitance of existence with

1 tasmād yaḥ prasaṅgaḥ svapakṣasiddhyaṅgaṃ tasya viparyayāparyavasāyitā doṣāyai'va syāt. KhKh, p. 1285.

momentariness on the ground of the negative concomitance of non-momentariness with non-existence. Here the belief in the objective concomitance of two positives necessarily involves the belief in the concomitance of the corresponding negatives. The failure to lead to the proof of the negative concomitance is tantamount to the failure of the proof of the original affirmation. But with regard to those critics who are interested only in the destructive criticism of the opponent's position, and who do not propose to establish any conclusion of their own, positive or negative, the only thing that matters is the provisional acceptance of the opponent's assertion for criticism. He shows that the assertion of the opponent is contradicted by the canons of logic accepted by the opponent himself. It does not lie in the mouth of the opponent to bring the charge against him that he does not believe in the objective truth of the necessary concomitance or its opposite. So far as the critic is concerned, his belief or unbelief in the necessary concomitance of any two terms and of their opposites, is a matter entirely personal, which has no bearing upon the success of a *reductio ad absurdum*[1].

The Naiyāyika may contend that the charge of incomprehensiveness is based upon a wrong conception of the nature of reasoning. A true reasoning is 'one in which a consequence unacceptable to the opponent is driven home as the determinant on the basis of a determinate endorsed by the proponent as well as the opponent'[2]. Thus there is no possibility of a purely destructive *reductio ad absurdum* being regarded as a case of reasoning and hence the inapplication of the definition to it does not give rise to the fault of incomprehensiveness. But this shifting of the ground does not improve upon the situation, since in the attempt to avoid one defect, it becomes exposed to another. The definition becomes too narrow, because it fails to embrace the species of reasoning which consists in the logical entailment of a desirable consequence. Thus the assertion, "If I were to have a glass of water, I could allay my thirst" is a case of valid reasoning, because

1 yas tu prasaṅgaḥ parapakṣabādhanāṅgam tatra parābhyupagamamātraṃ prayojakam.... KhKh, p. 1286.

2 atha vyāpyābhyupagamenā'niṣṭasya vyāpakasya pratītis tarka iti cet? *Ibid.*, p. 1287.

of the logical relation between the two as determinate and determinant[1].

The Naiyāyika may propose to delete the word 'unacceptable' from the definition. The definition so amended would include the case just mentioned. But it becomes too wide inasmuch as it overlaps the fallacious reasoning called 'the entailment of a consequence endorsed by the opponent'[2]. But let the adjective 'unacceptable to the opponent' in the first definition be replaced by the expression 'uncognised by a previous cognition'. The definition will thus stand as follows: "A reasoning is one in which a consequence uncognised by a previous cognition is driven home as the determinant on the basis of the determinate endorsed by the proponent as well as the opponent". This will not apply to the fallacious reasoning in which the consequence is endorsed by the opponent, because the consequence is not previously uncognised. But even this amended definition will be too wide, since it will overlap an act of primal inference in which the determinant was previously uncognised[3].

The Naiyāyika may contend that such inference is not a case of reasoning, because the determinant is known by means of a determinate which is truly cognised and not merely endorsed. But the defence cannot stand scrutiny. The difference of true cognition from endorsement of the determinate is only apparent in the first stage; though there is a veridical cognition of the determinate, yet the determinant cannot be made acceptable to the opponent, unless he is made to endorse the determinate. So even in inference employed for the conviction of the opponent the endorsement of the determinate by the opponent is essential and thus the difference based on true cognition and endorsement is bound to disappear in the ultimate resort. It is a truism of logic that the determinant cannot be proved to the satisfaction of the opponent by means of the determinate, though cognised and hence accepted by the proponent, unless the opponent

1 na, iṣṭārthasambhāvanāyām avyāpteḥ. KhKh, p. 1287.

2 tena vyāpakasya pratītiḥ sa iti cet? na. iṣṭāpādane'pi gatatvāt. *Ibid.*

3 apramitasya tathe'ti cet? na. prathamānumāne'pi gatatvāt, *Ibid.*

is persuaded to endorse it. Thus the definition extends to primal inference.

The Naiyāyika may contend: "Well, the difficulty can be avoided if the definition be amended as follows. 'Reasoning is one which leads not to the veridical cognition (*apramā*), but to admission of the determinant on the basis of the admission of the determinate'. Admission of the determinant means not veridical cognition but the enforced admissibility of it". The substitution of admission for veridical cognition in the definition of reasoning prevents it from overlapping inference no doubt, but it makes it exposed to another serious defect. The amended definition will overlap the fallacious reasoning called mutual contradiction (*mithovirodha*)[1]. To take a concrete example. In the erroneous perception of the shell as silver, the ontological status of silver is a matter of dispute. The realists have found a crux in it and the idealists have not refrained from exploiting the situation in the interest of their philosophical position. The realists contend that silver is real on the ground that an unreal cannot appear to a subject. The Naiyāyika would employ this reasoning in his support: "Were silver unreal, it would not appear. But it appears as a matter of fact. ∴ It must be real". The idealist would contest this reasoning by the following: "If the silver were genuine, it would not be contradicted. But it is contradicted as a matter of fact by the subsequent perception of shell as shell. ∴The silver cannot be genuine". Now, in both these instances there is enforced admissibility of the determinant by means of the determinate endorsed by both the proponent and the opponent. And so in terms of the definition they should pass muster as genuine cases of reasoning. But these reasonings are fallacious owing to mutual contradiction and so the application of the definition proves its untenability. The definition would also apply to the fallacious reasoning called the unreality of the subject (*āśrayāsiddha*), namely, "The sky-lotus must be fragrant, because it is a variety of lotus". Here also the admissibility of the determinant on the admission of the determinate is indisputable and so it should pass for a legitimate case of reasoning, which it cannot be on account of the unreality of the subject.

1 ...mithoviruddhādau tarkābhāse'pi gatatvāt. KhKh, pp. 1287-88.

But the Naiyāyika may contend that he can easily avoid this charge by adding a *proviso*, 'provided that it is not vitiated by any fallacy, such as mutual contradiction or the unreality of the subject.'[1] But it shows that the Naiyāyika has got a very weak case, since he has to employ a series of defences, and each defence by a fresh amendment makes it liable to a fresh onslaught. This amendment too is in the same position. The Naiyāyika lays stress upon 'the enforced admission of the determinant as opposed to the veridical cognition of it' as an essential element in reasoning. The definition yet will fail to include a genuine instance of reasoning in the following situation. Suppose that a person is in doubt whether smoke is actually present in a situation, though as a matter of fact the smoke is veridical. But it is legitimate on his part to argue: "If there were smoke, there must be fire". Here the tentative assertion of smoke and fire transpires to be an assertion of a veridical situation. So there is veridical cognition of the determinant and thus the reasoning becomes true. The definition amended would not however be applicable to it, because the Naiyāyika seeks to exclude veridical cognition of the determinant in order to prevent its extension to primal inference. But the Naiyāyika might seek to avoid this unpleasent situation by putting a new interpretation on the clause 'the admissibility of the determinant as opposed to the veridical cognition of it'. The Naiyāyika may contend that the meaning of the clause is not that there may not be an actual veridical cognition, but that the veridical cognition though present as a matter of fact, is not realised as such *at that time*. The definition thus interpreted will not apply to the doubtful situation cited above, because the cognition of fire though it happens to be veridical, is not realised as such at that time, but as a tentative possibility[2].

Even this amendment cannot be successful. The first objection to it is that it employs the pronoun 'that' (at *that* time). Now these pronouns always stand for specific cases and so cannot convey a generic meaning which is applicable to several situations. The logician only seeks to create an illusion of uniformity by means of the uniform

1 āśrayāsiddhyādivyatireke sati'ti cet ?

KhKh, p. 1288.

2 tatkālaṃ pramātvenā'pramiyamāṇā ity api'ti cet ? *Ibid.*

pronoun, but as their meaning is bound to vary in each case, the uniformity can at most be formal. Apart from this formal difficulty the definition will extend to the fallacious instance called suicidal reasoning, which as has been shown before occurs when the determinate is accepted by both the parties and the determinant is unacceptable to the opponent as well as to the proponent himself. In this case there is forced admissibility as opposed to the veridical cognition of the determinant. It has been proposed to avoid this contingency by the *proviso* that the word 'determinate' in the clause 'on the basis of the admission of the determinate' should be read as 'falsely assumed determinate'[1]. This amendment precludes its extension to suicidal reasoning, since the determinate is accepted as true by both the parties. But this amended definition will fail to include a case of reasoning based upon the determinate accepted as veridical by both the parties. To take a concrete example. In a dispute between the Mīmāṃsist and the Naiyāyika regarding the cause of an effect, such as a sprout, the Mīmāṃsist would explain the production of the sprout at a determinate time and place by appeal to unseen destiny as its operative cause. The Naiyāyika on the other hand would explain it by appeal to an agent (God). The sprout must be produced by a conscious agent as it is a product like a jar. This is a case of legitimate reasoning according to the Naiyāyika, since the determinant is entailed by a necessary concomitance which the Mīmāṃsist cannot afford to deny. But the definition fails to apply to it, because of the insistence on the determinate being falsely assumed. The determinate in this case, 'the sprout being a product,' is really present and recognised as such by both the parties.

We have examined all the possible definitions of reasoning and found them to be vitiated by one defect or another. This shows that reasoning cannot be an acceptable logical category. The result achieved by the examination of the general definition will be confirmed by its failure to apply to the specific instances which we are going to discuss.

1 tadvyāvacchedārtham āropitasya vyāpyasy-ābhyupagamene'tikaraṇe ca siddhena vyāpyena prasaṅgasy'āvyāpanāt. KhKh, 1288.

CHAPTER XIII

SPECIES OF REASONING CRITICISED

SECTION I

We have already dealt with the various divisions of reasoning in chapter ix and shown in chapter x how these species of reasoning turn out to be fallacious instances on account of the lack of one or other essential condition. Śrīharṣa contends that the definition of reasoning finally propounded as 'the entailment of the admissibility of the determinant on the basis of a falsely assumed determinate', is susceptible of application to the false simulations of self-dependence, mutual dependence, vicious circle, the vicious infinite, contradiction, and *tu quoque*, which are the recognised six species of authentic reasoning. If the definition of authentic reasoning can be shown to extend to fallacious simulations, the definition must be condemned on the charge of undue extension. And so long as a logically sound definition cannot be formulated, we must accept the conclusion that reasoning is not capable of being defined and hence not capable of being conceived as a distinct logical category and as such must be dismissed as an uncritical and an irrational figment of the imagination.

We have already shown that knowability is a universal subsistent and being again knowable in its turn, the attribute knowability becomes an instance of self-dependence. But the difference of the terms of reference and of relations is supposed to make the charge of self-dependence in this case a false simulation. Again, a jar enduring for a considerable period of time must change every moment of its existence and to account for this transition of states in terms of causality, the previous jar must be recognised as the causal condition of the subsequent one. Here the self-identical jar being the cause and effect of itself involves the charge of self-dependence which is however a false appearance. The unreality of the fallacy is due to the difference of time-relations. We have shown that mutual dependence and the vicious circle turn out to be innocuous if there is

difference of individuals. As regards the vicious infinite, both progressive and regressive, we have shown how in the case of the independence of the terms in respect of genesis, cognition, and subsistence the infinite series becomes legitimate and valid. Regarding *tu quoque* it has been shown how it ceases to be vicious if there is a special consideration in support of one alternative. Now all these cases of reasoning fail to act as invalidating weapons in spite of their seeming analogy with their compeers which are really vicious.

We have made this digression in order to drive home the fact that the definition of reasoning as 'the entailment of the admissibility of the determinant on the basis of a falsely assumed determinate' applies to these cases, though they are not legitimate cases of reasoning as an instrument of refutation. It is quite arguable that what is real cannot be its own locus and content, that is to say, cannot depend upon itself for its existence and things which are real cannot be dependent upon one another in respect of genesis, cognition and subsistence. This is the reason why self-dependence etc. are regarded as logical fallacies. But in spite of appearances we have shown how exceptions can occur. The definition of reasoning under consideration applies to these exceptions and so becomes exposed to the charge of undue extension.

The logician may contend in defence that the definition can be made perfect if a *proviso* is added: 'subject to the consideration that the validating conditions are absent'[1]. We have found that the validating conditions are the difference of the terms of reference, relations, numerical difference, and so on. When these conditions are absent reasoning becomes a legitimate weapon of refutation. Śrīharṣa in answer to this defence of the logician asserts that it is a stratagem of escapism. Now it is not possible that all the validating conditions should be absent in each case, and so it must be conceded that the absence of the conditions one by one makes these species of reasoning invalidating weapons. But the difference of terms of reference and consequential relation which is supposed to be the validating condition

1 prasaṅgasthāne tāvatāṃ viśeṣāṇām abhāvenā'pi lakṣaṇaṃ viśeṣaṇīyam iti cet? KhKh, p. 1297.

of self-dependence is found to be present in mutual dependence and vicious circle, because though they terminate in self-dependence, the difference of the intermediate links in the chain has every right to be regarded as a difference in the terms of reference. But this does not vest mutual dependence and vicious circle with validity. As regards numerical difference which is supposed to legitimatize mutual dependence, it is found to be present in the vicious infinite also. But that does not confer validity upon the vicious infinite. It cannot be denied that in the infinite series of terms there is numerical difference of the cause and effect and so the charge of self-dependence cannot be brought home. But in spite of this validating condition it cannot be regarded as a valid case, because the charge of self-dependence is sought to be resolved by the indefinite extension of the chain through the addition of successive links which cannot be successful, because the chain cannot be completed. Here there is mutual dependence coupled with numerical difference of the terms. But the numerical difference does not legitimatize the mutual dependence involved in it. So these validating conditions resorted to by the logicians to account for the difference of legitimate self-dependence from illegitimate self-dependence and so on transpire to be so many dodges calculated to throw dust in the eyes of the superficial observer. It cannot be denied that the so-called fallacies of self-dependence, mutual dependence, vicious circle and the vicious infinite are ultimately resolvable into the identical fallacy of self-dependence, and the extension of the chain is only a device to fly in the face of it by a show of numerical difference. Śrīharṣa is too astute a thinker to be deceived by these tactics and accordingly lays his finger on the weak spot. He asserts that the difference of reference is found in mutual dependence and vicious circle, but the fallacy of self-dependence which is involved in them is not resolved thereby. And numerical difference which is supposed to be the solvent of mutual dependence and vicious circle is present in the infinite series, but it fails to overcome the fallacy of mutual dependence which is undoubtedly involved in it. So the incorporation of the absence of the validating conditions in the definition of reasoning to prevent its extension to fallacious semblances of self-dependence etc. only results in making it too narrow and incomplete, since it will not apply to cases

of self-dependence etc. involved in mutual dependence and the vicious infinite, because the validating conditions are not absent in the latter[1].

Furthermore, the definition of reasoning must overlap such cases of censure as the admission of a proposition contrary to the established conclusion (*apasiddhānta*) and the contradiction of the thesis (*pratijñāvirodha*)[2]. Thus, for instance, it will be possible to argue: "If the Buddhists admit pre-disposition to be permanent, it will be a case of admission of a proposition contrary to their established conclusion of universal flux". Here 'the admission of permanence' is the determinate which is shown to entail the admission of a contrary position as the determinant and so it is a case of reasoning. Similarly it may be argued: "If you assert a proposition to be false which you have previously admitted to be true, you will be guilty of contradicting an established truth and your previous admission of it". Here the assertion of falsity is the determinate and contradiction is the determinant. The definition of reasoning applies to it. But the logician cannot accept these cases as instances of reasoning, since he has recognised them to be cases of censure. He cannot plead that there is no difference between reasoning and these censures, as in that case these censures should be subsumed under a head in which reasoning will be included. The different enumeration of them in the list of censures would become absolutely indefensible if these censures were also cases of reasoning.

Up till now the general nature of reasoning in terms of the definitions propounded by the logicians has been subjected to scrutiny and the result has been disappointing in that no definite conception of reasoning as a logical category either in the way of refutation or confirmation could be spotted out. Śrīharṣa now proposes to examine the different species of reasoning, namely, self-dependence and others with a view to the determination of their logical validity. The result will be found to be equally disastrous.

(i) Self-dependence

Let us take up the case of self-dependence. It is a species of reasoning and as such must consist of a logical determinate and determ-

1 KhKh, pp. 1297-98.

2 api ca'pasiddhāntavirodhādiṣv api tarkalakṣaṇaṃ gacchat kathaṅkāraṃ vāraṇīyam?, *Ibid.*, p. 1298.

inant governed by the relation of necessary concomitance. Now the question pertinently arises: "Is self-dependence sanctioned by necessary concomitance or not?" If it is endorsed by the valid cognition of necessary concomitance, self-dependence must be regarded as legitimate and valid, far less a logical offence. If on the contrary, there be no necessary concomitance between the determinate and the determinant, it will be a false simulation[1]. But the logician may contend that this sweeping condemnation on abstract consideration is inspired by a carping spirit and not by a desire to understand the real issue. What is meant by the charge of self-dependence is 'that which is the locus of anything cannot be the content of it'. A thing cannot be its own locus and content, its cause and effect, and its cognisant and cognised. It is preposterous that the same thing should be the cause and effect, locus and content, subject and object. Śrīharṣa in reply asserts that such formulation of reasoning is wide of the mark. One cannot contend that a thing cannot be a content and a locus. It is seen that the jar is the content of its parts, but is the locus of colour. So the opposition of locus and content is neither generic nor absolute, but specific and relative. One can at best contend that A cannot be the locus or content of A. But it is a matter of specific observation and has no jurisdiction beyond the specific data. The relation holds between two individual facts and so the question of universal and necessary concomitance is *ultra vires*. It will not be legitimate to deduce from a single observation a general rule. Each case will have to be attested by individual observation and so the relation can at most be empirical in character and thus incapable of laying claim to apodeictic certainty[2].

Even granting the validity of the proposition 'A cannot be the locus and content of A', one cannot jump to the conclusion that B, or C, or D cannot be related as locus and content of themselves. The matter is entirely empirical and because A is not B and B is not A one cannot legitimately infer that what is observed to be true of A will be true of B. In fact, all the propositions which allege the charge of self-

1 ātmāśrayādeś ca mūlavyāptau pramāṇopagamaś cet tarhi prāmāṇikatvān na doṣatvam, na cen mūlaśaithilyam ity ubhayataḥ-pāśabandhaḥ kathaṃ mocanīyaḥ? KhKh, p. 1299.

2 *Ibid*,

dependence and the like are singular propositions, and in spite of the formal character of universality asserted by the logicians their validity is entirely confined to the observed cases, and does not extend to other facts. It is refreshing to note that Kant has placed singular propositions in a different category from the general propositions, having a real universal reference. In Formal Logic, the singular proposition is regarded as an A proposition together with general propositions. But this is purely a formal affair and has no material validity.

The logician has contended that he does not bank upon the universal reference of the proposition concerned. Even admitting that it is a singular proposition, the logician will show that self-dependence becomes an effective instrument of refutation. When it is asserted 'A cannot be the locus or content of A', it is implied that the identity of A would be imperilled, if the relation of content and locus were to be asserted[1]. So the charge of the lack of extra-individual reference on which Śrīharṣa bases his contention only illustrates the sceptic's eagerness to pick a hole in the opponent's position without caring to understand its meaning. But Śrīharṣa is not satisfied by this defence. He says that the very assertion of the *reductio ad absurdum* is vitiated by self-contradiction. The logician would have to assert "A cannot be A, if A is to be the locus and content of A". The proposition 'A cannot be A' is self-contradictory and as such cannot be asserted. So the *reductio ad absurdum* becomes itself absurd. It may be contended in defence by the logician that the assertion of the absurdity affects only the opponent. In fact, the opponent can be proved to be in the wrong only if it is shown that his position involves absurdity. Śrīharṣa criticises this defence as a case of sophism. It is asserted by the logician himself that the validity of the *reductio ad absurdum* ultimately consists in the proof of the opposite proposition. Now the *reductio ad absurdum* "A cannot be A, if it is to be its own locus and content" cannot lead to the proof of the opposite proposition. The opposite of the proposition 'A cannot be A' is 'A must be A'. But the latter is not a proposition at all. A logical proposition is one in which the

1 etadāśrayatvād etadāśritatvād vā nai'katvaṃ syād iti vacanabhaṅgyā 'pādyam iti cet ? KhKh, p. 1300.

subject and the predicate have different connotation. But in 'A is A', the same thing is the subject and the predicate, and as such it cannot be a proposition for the proof of which the employment of the *reductio ad absurdum* can have justification[1].

The logician may contend that self-dependence and the like are only the instances of the type of reasoning called 'purely destructive'. In destructive *reductio ad absurdum* the culmination in the proof of the opposite proposition is entirely out of the question and so the criticism of the sceptic does not affect the validity of self-dependence etc. as types of reasoning[2]. Śrīharṣa in reply observes that this is only a device of escapism. It is not a fact that self-dependence etc. are used only for destruction of the opposite thesis and not for confirmation of one's position[3].

1 KhKh, pp. 1300-01.

2 na ca prasaṅgamātram etadbādhāyai'va astu, kṛtam asya viparyayaparyavasānene 'ti yuktam. *Ibid.*, p. 1301.

3 Śrīharṣa has contended that self-dependence and the like are not necessarily used for purely destructive purpose and are therefore capable of being used as confirmatory considerations. He has not however cited a concrete illustration in support of this assertion. It can be shown that Śrīharṣa's argument is supported by facts. The definition of cause as the invariable antecedent, provided it is not *otherwise realised* (*anyathāsiddha*) will on analysis show that self-dependence is used as an argument in support of the logician's position. The word *anyathāsiddha* literally means what is *otherwise realised*. The cause is defined to be one which is not otherwise realised. Now the adverb 'otherwise' is a relative term and cannot be understood without reference to a particular datum. It can only mean therefore that a cause is one which is not realised as other than a cause. In other words, a fact which can be realised as other than a cause is not a cause. But if this be the meaning of the term, the definition becomes a case of self-dependence. A cause is defined to be one which is not realised as other than a cause. 'Not other than a cause' means the cause itself. The Naiyāyika realised this drawback and took care to assert that the expression 'otherwise realised' (*anyathāsiddha*) is not to be taken in its grammatical sense, but rather as a technical expression which means three or five kinds of facts, namely, the invariable characteristic of a cause or its attributes or the cause of a cause and so on. Thus though the jar is the cause of drawing water, jarhood which is an essential accompanying attribute of it, without which the jar cannot be known, is not its cause. So also the colour of the jar is not the cause. So

Moreover the logician does not admit the validity of an argument in which the necessary concomitance is not endorsed by both the parties. A *reductio ad absurdum* derives its cogency ultimately from the positive concomitance of the determinate and the determinant and if it happens to be the case that the logician does not believe either in the positive or in the negative concomitance, he is precluded by the logical code accepted by himself to propound a proposition, which presupposes such concomitance.

The logician may rejoin: "You are entirely mistaken. I do not assert the *reductio ad absurdum* in the form 'A will not be A'. I mean to say that 'A will be other than A, if A is to be its locus and content'. Śrīharṣa in reply asserts that the difference between the present and the previous *reductio ad absurdum* is merely verbal. The content of the latter is the same with that of the former. To say that 'A will be other than A' is the same thing as to say 'A will not be A'. Thus the charge of self-contradiction remains as it is[1]. The charge of failure to lead to the opposite is also unescapable even in the amended form. The opposite of the *reductio ad absurdum* 'A will be other than A' is 'A will be not other than A', which can be further expressed as 'A will be other than other than A'. The propositions 'A is not other than A' or 'A is other than other than A' mean that 'A is A'.[2] It has been observed more than once that a tautologous proposition is no proposition at all, because the predicate and the subject are one. But the Naiyāyika may observe that in the *reductio ad absurdum* 'A will be other than A', the predicate is simply 'otherness' and A is

again the potter who has produced the jar is not the cause of drawing water. Each of these cases is regarded as *anyathāsiddha*. Now the reason for departure from the etymological meaning of the term is nothing but the desire to avoid self-dependence. Thus the necessity of the avoidance of self-dependence is the reason for the avoidance of the etymological meaning of the expression *anyathāsiddha* and the interpretation of it as one or the other variety stated above. This shows that self-dependence is not necessarily a purely destructive consideration, but is used as an argument in support of one's position also.

1 ata evaitadanyat syād ity api na śakyaprasañjanam...vyāghātād eva. KhKh, p. 1303.

2 ...etadananyatvasy' aitadanyānyatvasy' aitatvād eva. *Ibid.*

stated to specify the 'otherness' and should not be construed adjectivally as an integral part of the predicate. A here serves as a pointer and index (*upalakṣaṇa*) standing aloof and so the proposition does not become tautologous, because A does not enter as an element into the predicate[1]. The ingenuity of the logician is admirable no doubt. But

1 Indian logicians have recognised two different types of adjectives, namely, internal (to the substantive) and external. In the proposition 'the blue lotus is waving in the air', blue is an adjective internal to the lotus and so is associated with the action predicated of it. The external adjective is of two types, namely, (1) one in actual association with the substantive and (2) the other not in such association. The first is called *upādhi* and the second is called *upalakṣaṇa*. The internal adjective is called *viśeṣaṇa*. The external adjective stands aloof and apart from the substantive and is not integral to it. So it cannot come into relation with the predicated attribute. The *upādhi*, though external, is connected with the substantive by an external relation. It may be called an associate adjunct. The Vaiśeṣika maintains that auditive organ is nothing but ether (*ākāśa*) enclosed in the ear-drum. The ear-drum is the associate adjunct of ether. The difference between an *upādhi* (associate adjunct) and *upalakṣaṇa* (a pointer or index) is that the former can serve to distinguish the substantive so long as it is actually present, whereas the latter need not be present in order to distinguish the substantive. It distinguishes the substantive by virtue of its association with it at some past time. Thus the deceased author of a book serves to distinguish the book, though he is not present at the time of distinction. The notice-board of a shop may be cited as another instance. Even when the notice-board is removed, we can tell the shop, because of the past association of the notice-board with it. The classical example of *upalakṣaṇa* is 'the crow on the roof of Devadatta's house'. The crow helped us to identify Devadatta's house when it actually perched upon it. But the crow may have flown away and yet we do not find any difficulty in distinguishing Devadatta's house by reference to the crow. The crow, now absent, serves to distinguish it.

To sum up. Though all adjectives are distinguishers, the *viśeṣaṇa* being integral to substantive is adjective *par excellence*. Regarding the external adjectives, the *upādhi*, the associate adjunct as we have called it, must needs be actually present in order to distinguish the substantive. Thus there will be no organ of hearing if the ear-drum is destroyed in spite of the fact that *ākāśa* is ubiquitous and eternally present. As regards *upalakṣaṇa* which we have named pointer or index, its association with the substantive is not coeval with it and as such can serve to distinguish it in absence. We may also call it once-associate adjunct, but dissociated from it during its subsequent career.

it seeks to escape the issue. In self-dependence the consequent alleged is 'otherness'. This 'otherness' without reference to A will be a pointless objection. The absurdity involved in making the same thing the locus and content of itself is shown by the consequent 'A will be other than A'. If mere 'otherness' without reference to A is to be predicated, it will not involve any absurdity, since A's otherness from B, or C is an obvious fact. The *reductio ad absurdum* can be effective only if it is shown that A will be other than A, if A is to be its own locus and content. So A cannot be detached from 'otherness' and be regarded as a mere pointer, if the absurdity is to be driven home[1].

But the logician contends that the numerical difference of things is undeniable. In fact, the identity of one thing is not the identity of another thing, and this difference of identity is integral to the individuality of things *per se*. So A's otherness is a self-subsistent fact, and the characterisation of it by A as A's otherness, is only a methodological device which enables us to prove its otherness to a disputant. Such being the case A's otherness stands intact even if we do not characterise it by reference to A. And it is this otherness which is the characteristic of things *per se* and is different in each case that is alleged to be the consequence of self-dependence, and as A does not enter as a qualifying element into otherness, the charge of proof of the obvious cannot be brought home. The alleged 'otherness' is not understood as otherness than B's or C's, but as A's otherness which is the concomitant of A's individuality. And because A stands apart and aloof as a pointer to this otherness, the charge of self-contradiction and the consequential charge of tautology in the acceptance of the opponent's position do not arise[2].

Śrīharṣa observes that the defence shows the desperate straits to which the logician is reduced. The logician posits that the phenom-

In the present context the logician seeks to wriggle out of the difficulty by regarding A, in the predicate 'other than A', as an index dissociated from the subject at the time of the affirmation of the predicate.

1 anyatvāvadher ātmana upalakṣaṇatve...paryavasyet.

KhKh, p. 1303.

2 svarūpata eva vilakṣaṇam anyatvaviśeṣam avadhir ātmo' palakṣayati...

Ibid.

enal objects are each possessed of numerical difference *per se*. What is the ground of this postulation? It is nothing but the cognition of their difference. But the cognition of difference does not necessarily presuppose factual difference of identity of different things. It can be accounted for by the difference of associate adjuncts, though the 'otherness' which is the object of differentiation be an undifferentiated unity. Even the logician admits that space is one, but we differentiate the space of one room from that of another and also from the spaces enclosed within a jar or a ship. The differentiation of space is due to the difference of associate adjuncts and not to objective difference in space. The numerical differences of the phenomenal objects can likewise be explained by reference to the difference of the associate adjuncts, though the things may not actually differ from one another. The defence based on objective numerical difference of things thus topples down[1].

Even if the numerical difference of things be admitted as factual and objective this will not give any advantage to the logician in the present context. The otherness of A may be different from that of B and also be self-contained. But when the *reductio ad absurdum* in self-dependence is to be demonstrated it can be done only with reference to the objects concerned. Let us examine the example 'A will be different from A, if A is to be its own locus and content'. Now if difference alleged as the consequent be not specified as A's difference, but the factual difference as pertains to it as an objective characteristic without reference to A, it will prove at most that A has a different identity of its own. But nobody is interested in disputing this obvious fact. That A has an identity different from that of B or C is not the object of dispute and the logician will not gain anything if he thinks that it is this difference that is entailed in the *reductio ad absurdum*. Thus interpreted the proposition will become absolutely innocuous. The absurdity can be driven home when it is shown that the admission of A being the content and locus of A will entail A's numerical difference from A. Mere difference will not prove anything damaging and so the difference must be qualified by A[2].

1 KhKh, p. 1303.

2 *Ibid.*, pp. 1303-4.

We have stated the ground and the consequent as individual facts. But the necessary concomitance between them must be stated in general form, namely, 'if a thing is to be its own locus and content, it must be numerically different'. But we have shown that the general concomitance is only formal and each case of self-dependence as a *reductio ad absurdum* reduces itself to a singular proposition. The *reductio ad absurdum* can be effective only if it is couched in the form 'A will be different from A, if A is to be its own locus and content'. We have already shown that the absurdity can be brought home only if the difference alleged is to be qualified by A. Mere unqualified difference proves nothing. So whether the terms of the *reductio ad absurdum* be accepted either as specific individuals or general terms, the difference alleged must be qualified by the terms themselves. It does not make any difference whether A is interpreted as a class or as an individual. The logician cannot avoid the absurdity involved in making A different from A, because his attempt at eliminating A from the difference as a pointer in detachment has proved to be a bluff[1].

We have considered self-dependence in respect of subsistence and not in respect of genesis and cognition. But the same line of argument is adoptable in these two respects also. Thus if A is to be regarded as the cause or product of A, A will be split up into two different identities. In other words, 'A will not be A' or 'A will be other than A'. Similarly in respect of cognition 'if A is to be the cogniser and the object of cognition of A, A will not be A or A will be other than A'. These are the typical forms in which self-dependence can be formulated as a *reductio ad absurdum*. The objections raised by Śrīharṣa that the *reductio ad absurdum* as stated involves self-contradiction and tautology in its negative implication apply as effectively as it has been shown to do against it in respect of subsistence.

(2) Mutual dependence

As regards mutual dependence or logical see-saw Śrīharṣa holds that it is exposed to equally fatal objections. The charge of mutual

1 KhKh, p. 1304.

dependence arises if the cognition of the difference of A from B requires as its condition the cognition of B's difference from A. Now what is the possible form of its assertion ? If A is to be known by reference to B and B is again to be known by reference to A, A will not be known at all. If this be the form of assertion it becomes downright nonsense. If there be no possibility of knowledge of A, then how can it be asserted ? If the cognition of A is conceded to be an observed fact, the assertion of its impossibility will involve contradiction. If there be no such cognition then the necessary concomitance between the cognition of A's difference from B as dependent on the cognition of B's difference from A, and the impossibility of the cognition of A will never be realised. So the *reductio ad absurdum* will be exposed to the charge of lack of logical sanction (*mūlaśaithilya*), since the concomitance of the ground and the consequent remains unknown[1]. It has however been maintained that if the necessary concomitance is stated in a general form as follows, "An entity cannot depend on another entity for its cognition, if the cognition of the latter presupposes the cognition of the former", then the alleged difficulties will not arise. The *reductio ad absurdum* may be stated in the form "If A and B are real, they cannot depend on each other in respect of cognition".

But Śrīharṣa does not think that this formulation is free from difficulty, though it succeeds in avoiding the charge of the impossibility of the knowledge of necessary concomitance and self-contradiction. The *reductio ad absurdum* as stated in mutual dependence presupposes the necessary concomitance between reality and the impossibility of mutual dependence in respect of cognition. But this concomitance can be regarded as necessarily universal if the opposite possibility is ruled out. There is no argument available to prove the impossibility of the contention, "Let things be real, though they may be found to depend on one another in respect of cognition". So long as this contention is not ruled out as an absurdity, mutual dependence cannot be adduced as an invalidating argument, because of the lack of

1 na tāvad yady etad etadbodhādhīnabodhaṃ syāt tadā na buddhyete'ti, tathā sati vyāptyasiddheḥ...

KhKh, p. 1306.

necessary concomitance which is the foundation of all cases of *reductio ad absurdum*[1].

(3) Vicious circle

As regards the vicious circle it is nothing but a case of self-dependence or mutual dependence only protracted by the interposition of additional links. We have already noticed how vicious circle and mutual dependence can ultimately be reduced to self-dependence. The consideration of an accredited instance of circular argument which has received the imprimatur of approval will place the matter in a clear perspective. "Salvation is achieved by the elimination of each immediately preceding link induced by the elimination of each succeeding link in the chain of suffering, rebirth, voluntary activity, defects of attachment, aversion, and wrong cognition[2]". The meaning of this aphorism is this. True knowledge of the nature of the self and not-self is the cause of salvation. But it does not immediately lead to this final consummation, but only in and through successive stages. The elimination of the immediate successor entails the elimination of the immediate predecessor in the chain. True knowledge eliminates wrong cognition and because wrong cognition is the cause of attachment and aversion, its elimination directly entails the elimination of these defects and the elimination of the latter entails the elimination of voluntary activity, which is productive of religious merit and demerit. This again entails the elimination of rebirth which is nothing but the embodiment of the soul in a distinctive psycho-physical organism. The elimination of the latter involves the elimination of suffering which is incidental to physical incarnation of this self.

Now the truth of the aphorism presupposes a circle of cause and effect. Wrong cognition is the cause of attachment and aversion and the latter is the cause of merit and demerit induced by voluntary activity. And this in its turn results in incarnation which is again the cause of suffering, which is nothing but the false cognition of identity of the self with the body. This false cognition again pro-

1 KhKh, p. 1306.

2 duḥkhajanmapravṛttidoṣamithyājñānānām uttarottarāpāye tadanantarāpāyād apavargaḥ.

NS, I. i. 2. See also KhKh, p. 1313.

duces aversion and attachment which again produce various activities, which again produce a fresh birth and this again produces a fresh series of suffering. So the circle of cause and effect goes on uninterruptedly until the saving knowledge takes place. This is a case of argument in circle involving reciprocal causality.

But though a circle, the Naiyāyika does not regard it as vicious. It is true that wrong cognition presupposes wrong cognition as its condition through the interposition of certain intermediary links. But the two wrong cognitions are not numerically identical. The wrong cognition which has led to the emergence of the present birth and the wrong cognition which is again produced by the latter are numerically different individuals. The difference of the individuals as cause and effect shows that the circle is not vicious. The circle becomes vicious only when the initial link and the final link in the chain are one and the same.

This defence is apparently satisfactory. But a difficulty is confronted when we try to understand the problem a bit more closely. It is held that suffering is the effect of birth; birth is the effect of activity; activity is the effect of defect; and defect is the effect of wrong cognition. It is because each preceding link is the effect of each succeeding link that the elimination of the succeeding link entails the elimination of the preceding one, because the disappearance of the cause induces the non-emergence of the effect. Now this relation of causality is ascertained by the application of the Joint Method. It is plain that the causal relation as understood between two facts has necessary reference to two classes of facts and not individuals. If the causal relation were apprehended between the observed facts *per se*, nobody could understand another individual of the same class as the cause. Causal relation must be admitted to be possessed of a general reference. A man observes that fire produces smoke. The observation is strictly speaking of two individual entities, fire and smoke. But the man, who apprehends fire as the cause and smoke as the effect by observing the presence of fire attended with the presence of smoke and the absence of fire attended with the absence of smoke, invariably produces fire in order to produce smoke. But the latter fire and smoke are different numerically from the previously

observed fire and smoke. So the causal relation is always understood not between two individual phenomena *qua* individuals, but between two facts, so far as they typify and embody the class-character which belongs to all members of the class. The causal relation that obtains between suffering and birth and so on as stated in the aphorism should in the light of these findings be understood to subsist between two classes and not individuals. Individually suffering and birth are different in each case. But as the causal relation does not obtain between them as individuals, but so far as they represent the classes, the difference of individuals has no bearing upon it. The numerical difference of individuals which is entirely irrelevant to the causal relation cannot therefore be regarded as a solvent of the mutual dependence involved in it. The defence by the Naiyāyika of the validity of the circular argument by reference to the numerical difference of individuals is thus found to be a dodge, which may succeed with unreflecting persons[1]. The failure of numerical difference to serve as a validating condition does away with the defence of the logician of circular argument as valid in one case and invalid in others. If circular argument be valid at all, it must be valid in all cases, and if invalid it must be invalid without exception.

It may however be argued by the logician that the charge of self-contradiction and tautology alleged by Śrīharṣa to arise necessarily in self-dependence etc. is rather formal. It is asserted by the logician no doubt that the admission of the same thing being the cogniser and cognised, locus and content, cause and effect, will involve the admission of the absurdity 'A is not A', while in reality 'A is always A'. To assert 'A is A' is to assert a truism. But the assertion of this truism is necessary to bring home the absurdity involved in the denial of identity which is the implication of self-dependence in respect of genesis, subsistence, and cognition. True, that 'A is A' is not a proposition and so also 'A is not A'. The logician does not categorically assert these propositions, but is impelled by circumstances to allege them as consequences. It may be asked how can the logician

1 kāryakāraṇabhāvasya tajjātīyatayā niyatattvena vyaktibhedasya cakrakānantarbhūtatvāt. KhKh, p. 1313.

entertain these propositions even as hypothetical possibilities, regard being had to the position of radical empiricism which is advocated by him? The logician of the Nyāya school cannot assert that in the proposition 'A is not A' the predicate 'not A' is an ideal construct, as the Buddhist would have it. The logician thinks that all our knowledge and assertion are derived element by element from veridical experience. Such being the case the logician cannot seek to escape the contradiction involved by regarding it as ideal as opposed to actual. The Nyāya logician particularly in so far as his latest interpretation of perceptual error goes cannot save his realism by making the relation an unreal fiction, which is the position of Vācaspati Miśra. Even in error the logician is not prepared to admit any subjective element. In the erroneous perceptual judgment 'this is silver' the subject and the predicate are both objective facts. Though Vācaspati Miśra admits that the relation between the subject and the predicate is subjective and hence unreal in the context, Gaṅgeśa differs from him and asserts that the relation is also objective, which is as much veridical as the predicate. Such being the case the logician of the Nyāya school cannot escape the charge of contradiction and tautology asserted by Śrīharṣa.

The *raison d'être* of self-dependence being a logical absurdity lies in the recognition of a necessary universal concomitance viz. a self-identical entity cannot be its own locus and content. The relation of locus and content, as also the relation of cause and effect, and of subject and object, is a necessary concomitant of numerical difference. But whatever the frequency with which it may be observed, concomitance of two facts must be regarded as contingent and precarious, if even a single exception can be found. The source of these inductions is ultimately experience and if a contrary experience is found to record an opposite finding, the necessity and the universality of the concomitance cannot be pressed with confidence.

Let us now consider whether the concomitance on which self-dependence is based is necessary and universal. We find that the concomitance of the relation of locus and content with numerical difference breaks down in the case of knowability, speakability, and the like. Knowability is a universal subsistent and as such is a

universal predicable. Knowability is also an object of knowledge and knowability is nothing but the quality of being the object of knowledge, which as much belongs to itself as it does to other objects. Thus knowability is subsistent in its own-self also. In other words, it becomes its own locus and content, though it is numerically identical. Likewise speakability being itself expressed by a speech is found to be speakable. The attribute of speakability therefore subsists in itself in spite of the lack of numerical difference between locus and content. So also the concept of usability, being itself usable is found to behave as its own locus and content. This is also found to be the case with inherence which is admitted to serve as a relation and the term of a relation. A quality is related to a substance by way of inherence. But this inherence being different from the terms, quality and substance both, ought to require another relation to belong to the terms. In other words, a relation being a separate entity is also a term in addition to the two terms which are brought into relation by it. But as the admission of another relation makes a *regressus ad infinitum* inevitable it is regarded as self-related. To be explicit. Relation as a term is supposed to act as its own relation. It is thus an object of relation as well as an instrument of it. Relatedness is a quality of the terms induced by a relation and when a relation is found to make itself related by itself it becomes the effect and cause of itself. To be related means to stand in a relation. To be precise, it means to be possessed of a relation. If relation be supposed to be self-related it would mean that a relation is possessed of a relation and as the second relation is the same as the first, the relation becomes its possessor and possessed, locus and content. In this instance the relation of locus and content is found to centre round a self-identical entity and so the alleged concomitance of numerical difference with the relation of locus and content falls down[1].

Similarly with regard to the counter-term of a negation. In the proposition: "The jar is not here", the jar is the counter-term and as such it has the attribute of being the counter-term of negation. Now

1 kiñ ca prameyatvābhidheyatvavyavahāryatva...katham ātmāśrayatākhaṇḍikā vyāptiḥ savyabhicārā na syāt? KhKh, p. 1310.

this attribute belonging as it does to jar cannot belong to the negation of jar. So the attribute is absent in the negation of jar and this attribute then becomes the counter-term of the second negation and must possess the attribute of being the counter-term. Thus the attribute of being the counter-term must be admitted to be possessed again of the attribute of being the counter-term. This means that a self-same attribute is the possessor and possessed of itself, in other words, as its own locus and content[1].

The logician may contend that this charge of self-dependence cannot occur, because there is either numerical difference of the terms or difference of the terms of reference, or there is difference of relation. In dealing with the charge of self-dependence regarding knowability, we have shown that the difference of terms of reference serves to make it legitimate and innocuous. But Śrīharṣa observes that this difference of relation or terms cannot be regarded as the solvent of contradiction involved in self-dependence, because there are cases of self-dependence etc. which are accepted by the logician as legitimate, although no such difference can be trotted out as validating condition. Thus Prabhākara holds that a cognition illumines the subject, the object, and its own-self at once. Here the cognition cognises itself, though it is numerically one and the same. Prabhākara cannot lay hold of numerical difference as the solvent of the incompatibility which becomes inevitable if the object of cognition and the act of cognition are held to be possible only in numerical difference. Likewise A is numerically different from B. The proposition means that A and B stand in the relation of difference. This difference being a third term is again different from each of the terms. And for this a second difference *qua* relation is necessary which can make the first difference a third term different from the original terms. But the second relation being in the same position with the first being a relation and a term alternately will require another difference to make it different from the terms in question. But since difference *qua* relation must needs assume the position of a term, a fourth difference will be necessary and the result will be an inevitable *regressus ad infinitum*. In order to avoid

1. KhKh, p. 1310.

this situation the logician holds that the relation of difference makes not only the terms different from each other, but also its own-self different from them. Here the same act of difference becomes the agent and object of differentiation. In plain words it is the differentiator of and differentiated by itself. Obviously it is a case of self-dependence. But the logician has to pass it as legitimate.

Take again the case of self-cognition. The Naiyāyika holds that the self is the cogniser of everything. When pressed with the question "Is the self cognised and if so by whom?", he answers that the self is cognised by the self, because there is no other cogniser than the self. In making this admission the Naiyāyika admits that the self is the subject and object of its own cognition. It is a clear case of self-dependence, but has got to be approved by him. Take again the proposition: "A word denotes a meaning". Now the subject 'word' stands for the whole class of words and as such stands for its own-self also. A word is thus denoter of itself and so is the denoter and denoted both. Here neither the subject, word, nor the act, denotation, is different. But the self-dependence involved passes muster with the logician[1].

Again, the Buddhist fluxist holds that things perish automatically without requiring a destroyer. A thing is thus destroyer of itself and in admitting the same thing to be the subject and object of destruction, the Buddhist ought to be guilty of committing the fallacy of self-dependence. But the Buddhist does not regard this self-dependence as illegitimate. The logician of the Nyāya-Vaiśeṣika school admits that a relation ultimately relates itself to the terms without another relation, just in the same way as it relates the terms. In admitting self-relation of relation the logician makes it the subject and object of the same act and yet does not feel an offence in it. As regards the later logician who holds that ultimately it is the terms themselves which behave as a relation, he makes the terms the relater of them-

1 dvāravyaktibhedasyā'pi vyabhicārivyatirekatvāt. svaprakāśavādinā svayam eva svajñānatvasya...ityādi bahulam upagamād ātmāśrayatadābhāsavivekāya kiṃ niyāmakam upeyam.

KhKh, p. 1310.

selves. The terms are thus the agent and object of the act of relation. In spite of self-dependence and in spite of the fact that there is no numerical difference in the act or in the terms themselves, the self-dependence involved in the situation has met with the seal of approval[1].

We need not multiply instances. We have shown that though there are cases of self-dependence in respect of subsistence, or of cognition, or of genesis, the philosophers of different schools have to pass them off as entirely valid and legitimate. The logician has not been able to furnish a criterion of legitimacy in one case and illegitimacy in the other. The plea of difference of terms of reference, or of relation cannot be substantiated in the cases cited above.

As regards mutual dependence also the philosophers are found to contradict themselves by admitting certain cases of mutual dependence as valid, although they cannot find any special validating condition. The Vaiśeṣika admits that sound produces another sound and the succeeding sound destroys the preceding one. The last sound which is perceived in the ear-drum does not produce another sound, yet it is destroyed. But what is the agent of destruction? The Vaiśeṣika holds that it is the penultimate sound, which produces the last sound, destroys the latter and the latter again is supposed to destroy the former. There is a plain case of mutual dependence in making A the destroyer of B and B the destroyer of A[2].

Again in equipollence as illustrated in the proposition "An entity which is produced is liable to destruction and whatever is liable to destruction is an entity produced", the first determines the second and the second determines the first. Here is a clear case of see-saw. But it passes muster. Again, several conditions are combined to produce an effect. Here the conditions mutually assist themselves and thus they are mutually dependent. But the realist does not notice any incompatibility in the situation[3]. Again, in asserting A is smaller

1 KhKh, p. 1310.

2 anyonyāśraye cā'ntyopāntyaśabdayor anyonyanāśakatāyām...katham na vyāptibhaṅgaḥ. *Ibid.*

3 *Ibid.*

than B, it is implied that B is bigger than A. The smallness of A is determined by the bigness of B and the bigness of B is determined by the smallness of A. Now it is a clear case of mutual dependence, which however does not cause worry to the philosopher. What makes these cases valid? The philosophers concerned maintain reticence on the question, because no criterion can be found. The logician may plead that there is no contradiction here and so these cases are passed off as valid. But this is not an honest attitude. Why should there be contradiction in other cases and the absence of contradiction in the cases under review? The basis of non-contradiction is propounded to consist in the absence of observation of self-dependence or mutual dependence in other cases and the same criterion should be applied in these cases also. If self-dependence and mutual dependence be logical fallacies in other cases, they should be regarded as logical fallacies in the cases considered above. If you think that in the cases under review self-dependence and mutual dependence are endorsed by an accredited organ of knowledge and in the fallacious instances there are no such validating conditions, it is proper to point out the validating conditions or their absence as the criterion[1]. If these conditions cannot be pointed out the assertions of self-dependence and mutual dependence as fallacies in one case, and as legitimate instances in other cases, become absolutely confusing. It has been shown that self-dependence and mutual dependence are not fallacious universally and necessarily and the logician has failed to formulate a criterion by means of which one can distinguish between a legitimate and an illegitimate instance. The conclusion seems irresistible that self-dependence and mutual dependence cannot be relied upon as instruments of refutation or of confirmation with absolute certitude.

SECTION II

(4) Contradiction

Contradiction is regarded as a species of reasoning. It consists in the admission of the co-existence of opposite attributes in the same

1 ......pramāṇābhāva ev'opajīvyo dūṣaṇam iṣyatāṃ, kṛtam anyonyāś-rayeṇa vyabhicaritadoṣatvene 'ti. KhKh, pp. 1310-11.

substratum. But the question arises, "How can it be asserted and in what form?" As has been shown to be the case with self-dependence, contradiction also cannot be asserted in the way of a proposition both in its positive form and in its negative implication. It is nonsense to say that an existent does not exist. It is equally nonsensical to assert, "Were it not existent, it would be non-existent", or "Were it not non-existent, it would be existent". The ground and the consequent in the propositions being identical, the propositions are tautologous. 'Not existent' is equivalent to non-existent and not non-existent is the same thing as existent. So how can they be regarded as determinate and determinant, since they invariably presuppose numerical difference as the condition precedent?[1]

Besides contradiction is also based upon necessary concomitance. Thus it is affirmed that "A cannot be both cause and not-cause of B". The impossibility of causality and non-causality with reference to the same effect in one substratum presupposes that the two should occur in two different substrata. But this supposedly necessary relation is found to be contradicted by their successive occurrence in the same thing at different times. Thus a seed is found to be productive of sprout at one time and non-productive of it at another. The logician may reply that the necessary concomitance of incompatibility of productivity with non-productivity is valid with reference to the same time. It is never found that the seed, which produces sprout at a time, does not produce it at that time. So the successive occurrence of opposite attributes in one substratum does not involve contradiction at all.

Śrīharṣa observes that the difference of time is irrelevant to the question of incompatibility. Now a thing and its annihilation are contradictorily opposed, though they occur at different times. It is never possible that a thing should exist at the time of its annihilation. The contradiction between them is therefore necessarily related to different times. So it must be admitted that the co-occurrence of the supposedly contradictory attributes is not universally impossible and the attempted solution of the contradiction by reference to

1. See KhKh, p. 1308.

difference of time is unconvincing. The logician has failed to demonstrate the basis of contradiction, which can be accepted as universally valid. The contradiction of supposedly incompatible attributes in one substratum is ultimately reducible to the opposition between existence and non-existence, being and non-being. But even this fundamental basis turns out on examination to be illusory, as it refuses to fit in with all accepted canons of logic.

Now what is the nature of opposition between being and non-being? It cannot be understood as non-compresence or non-co-occurrence, because the being of a pen is found at one place with its non-being at another place at one and the same time. So contradiction cannot be understood as non-compresence in one time. Nor can it mean non-compresence at one place, because the presence of a thing and the absence of it can occur successively in the same place. Nor can it be supposed to consist in non-compresence in the same place and the same time, because there are certain qualities, which are admitted by the Nyāya-Vaiśeṣika philosopher to coincide with their opposites in one substance. Such for instance are conjunction, disjunction, sound, and cognition and other specific qualities of the soul. These can occur only in one part and therefore coincide with their non-being in the remaining parts at one and the same time. So the compresence of the being of conjunction etc. and their non-being in the same substratum with reference to the same time being a veridical fact, the definition of contradiction would apply to it and as such must be rejected as invalid.[1]

It may be argued that the objection does not affect the position of those who do not believe in the existence of partially extensive qualities and as such are not bound to admit the compresence of an entity and its negation in the same substratum at the same time. Accordingly the definition of contradiction as the impossibility of the compresence of being and non-being in the same substratum at the same time stands unassailable.

But what is the meaning of the impossibility of compresence of

1 bhāvatadabhāvayoḥ ko virodhaḥ? sahānavasthānam iti cet? na......
KhKh, p. 1263.

being and non-being? Does it mean the negation of compresence of the two or the compresence of the negation of the two?[1] The first alternative is not entertainable, because the compresence of the two which is the counter-term of negation is not attested by an accredited organ of knowledge. The Nyāya-Vaiśeṣika logician is emphatic in his assertion that the negatum, that is, the counter-term of negation, must be a veritable real and can never be an ideal fiction. Even in the negation of such supposedly unreal fictions as a hare's horn, the logician regards the negata as objective facts. When it is asserted 'the hare's horn does not exist', the assertor does not commit himself to the admission of an unreal fiction. The meaning of the negative proposition under consideration is that a horn does not exist on the hare's head. The horn is an objective real being veridically perceived in a cow, and the hare and its head are also objective facts. It means therefore nothing more than this: the horn is not perceived on the hare's head. So negation is on the same footing with affirmation, so far as its reference to the objective datum is concerned. The counter-term of negation being universally and necessarily an objective fact, contradiction cannot be interpreted as the negation of compresence of being and non-being, because such compresence is never an object of cognition[2].

The second alternative is also found on examination to be equally absurd. The compresence of the *negation* of being and non-being means the presence of the negation of being together with the presence of the negation of non-being. But the negation of being means the affirmation of non-being and the negation of non-being means the affirmation of being. The second alternative thus analysed comes to mean the compresence of being and non-being which is absurd on the face of it. So the definition of contradiction as the non-compresence of being and non-being in the same time and place is found to be absurd whatever interpretation may be possibly put upon it[3].

1 tad dhi tadubhayāvasthānasāhityaniṣedho vā tadubhayāvasthāna-niṣedhasāhityaṃ vā syāt? KhKh, p. 1263.

2 *Ibid.*

3 *Ibid.*, p. 1265.

Let us try another definition: "Contradiction consists in mutual exclusion[1]." But the meaning of the word 'exclusion' is not clear. Now the logician divides all conceivable reality into being and non-being. And if exclusion be anything different from them, it becomes entirely unintelligible. If it is held that being excludes non-being and non-being excludes being, the meaning of exclusion common to both is not apprehensible. On the other hand, the meaning of exclusion is only found to shift from being to non-being, and from non-being to being. Exclusion of being is not the same as the exclusion of non-being. So the opposition constituted by the exclusion of being is not the opposition constituted by the exclusion of non-being. So opposition common to both is not understandable. Contradiction has been alternatively defined to consist in the non-occurrence of one in the substratum of the other and *vice versa*[2]. But then there is no contradiction, since being and non-being occur in different loci. Even if it be interpreted that occurrence means its relation and non-occurrence means absence of relation, and relation is different from the relata, it does not result in an improvement. When you assert that the occurrence of being is invariably concomitant with the non-occurrence of non-being and this is contradiction, you seek to keep off the opponent only by a barrage of words, which do not convey an intelligible meaning. You all along tacitly assume that the existence of being is the same thing as the non-existence of non-being. Such being the case, to assert that non-being does not occur in a locus in which being occurs is tantamount to the assertion that being occurs in which being occurs. But this is tautology plain and simple[3]. This will be made clear by a concrete example. "The jar does not exist in a place where non-being of the jar occurs". Or, "The non-being of the jar does not occur in the place, where the jar exists." These are the forms of assertion of contradiction. What is the meaning of

1 parasparapratikṣepakattvaṃ virodha iti cet? KhKh, p. 1265.

2 yatr'aikasya sattvaṃ tatrā 'parasyā 'sattvaṃ niyamena yat sa virodhas tayor iti cet? *Ibid.*

3 ......sambandhasya tadvyatiriktattve ekasattvasy' aiva............paunaruktyādy-āpātāt. *Ibid.*, p. 1265.

the clause 'where non-being of the jar occurs?' Occurrence has been interpreted as a relation. In the light of this interpretation the clause would mean 'to which non-being is related as its content'. The meaning of the predicative clause 'the jar does not exist in a place' means 'to which the non-being of the jar is related as its content'. So the assertion of contradiction reduces itself on analysis to a case of hopeless tautology[1].

Let us examine the second proposition. The meaning of the clause 'where the jar exists' is to which the jar is related as a content. And the meaning of the clause 'the non-being of the jar does not occur in the place' is to which the negation of the relation of non-being is related as the content, if occurrence is taken to mean relation, distinct from the relata. But this interposition of relation does not make the least improvement upon the situation, because the relation of negation is not anything different from negation, such as conjunction or inherence is. So the relation of negation is negation itself. The negation of non-being of the jar means the 'jar' and so the second proposition only asserts that the jar exists in the place in which it exists. The double affirmation of existence does not serve any purpose save and except that of deception of those who are guilible[2].

To take a retrospect, the logician has sought to define contradiction as the compresence of being and non-being. But being and non-being by their very nature can occur only in different substrata and in this there is no contradiction, and the attempt at putting them together has grievously failed.

The logician has made another attempt to resolve the deadlock necessitated by the assertion, "Between being and non-being, one occurs in the place where the other does not occur". It is held that the meaning of the clause 'where one occurs' means 'where one occurs alone and exclusively' and thus there is no tautology[3].

1 KhKh, pp. 1265-66.

2 *Ibid.*, p. 1266.

3 yatr'aikasy' āvasthānaṃ tatr' aikasy' aive' ti niyamābhiprāyeṇa na paunar-uktyādir iti cet?, KhKh, p. 1268.

But the meaning of exclusion implied by the adverbial phrase 'alone and exclusively' is not intelligible. If it is interpreted to mean 'that nothing else exists in the place', it will constitute a flagrant contradiction of fact. When it is asserted "The non-being of the jar does not exist, where the jar exists", the meaning of the clause 'the jar exists' cannot be the non-existence of anything else than the jar, because as a matter of fact the colour of the jar exists as an additional fact. So the meaning of the implied exclusion is intelligible only with reference to the opposite of it. But the opposite cannot be understood without knowing the meaning of opposition[1].

It has however been asserted that the position is quite simple and the difficulty is only the outcome of cussedness. The meaning of the proposition under consideration is that in the alternative occurrence of non-being, it excludes being and reversely being excludes non-being. So when it is affirmed that either being or non-being is alone possible in a locus, it means the exclusion of the other alternative[2]. But this attempt at oversimplification by the logician only indicates haste and impatience. What is wanted to be understood is the meaning of opposition and for this a definition of it has been asked for. In the latest attempt opposition is sought to be explained as exclusion of being in one case and exclusion of non-being in the other, and there is nothing common between the two and so opposition is not understandable. Moreover the exclusion of being means the assertion of non-being and the exclusion of non-being means the assertion of being. So it boils down to the assertion that being occurs where being occurs, and non-being occurs where non-being occurs. This is an outraging case of tautology[3].

It may now be contended that the difficulty is due to the consideration that opposition is a relation external to the terms being and non-being. But it is not anything different from the terms. Being

1 virodhivyavacchedakatvasya ca virodhānirvacane' nirvacanāt.

KhKh, p. 1268.

2 abhāvapakṣe bhāvavyavacchedo bhāvapakṣe cā'bhāvavyavacchedo niyamārtha iti cet? *Ibid.*

3 *Ibid.*

and non-being are opposed *per se*, and so opposition is nothing but their intrinsic nature[1]. It is exactly on a par with 'existence'. 'Existence' is the nature of an entity and its incidence in a thing makes it felt as existent. Opposition likewise makes an entity felt as opposite, in which it occurs. Being and non-being are thus felt as opposite to each other, because opposition is the very nature of them. One may ask, "If opposition be the very nature of the terms, being and non-being, and thus be identical with them, then what will behave as opposite? The answer is, the opposite is that which has opposition as an intrinsic element of its nature. Thus an entity, which possesses existence and opposition both as elements in its nature, behaves as an opposite existent. As regards a non-existent it has non-being and opposition as its character. And so it is felt as a non-existent, opposite of an existent. Opposition being the very nature of being and also of non-being, being and non-being are felt as opposites. Another important consequence of opposition is that things which are possessed of existence and non-existence as part of their nature behave as numerically different. Thus numerical difference and opposition go together[2].

This ingenious defence by the logician of opposition as the inalienable character of being, makes being and opposition identical. Similarly non-being and opposition are also to be regarded as identical. Let it be so. But we may ask whether opposition is the character of being and non-being severally and distributively, or of both of them collectively taken together. If opposition be the character of being or non-being distributively, then each of them will be split up into two opposites. Opposition cannot exist in one and the same thing and so if opposition be the same thing as being, being is bound to be split up into two opposites[3]. It has however

1 bhāvābhāvayoḥ svarūpam eva virodhaḥ...... KhKh, p. 1269.

2 kasy' aitau virodha iti cā'nuyoge svāśrayasy' ety uttaram, kiṃ tatra virodhaphalam iti praśne bhedavyavasthānam ity abhidheyam.

Ibid.

3 etayor virodhattvaṃ pratyekaṃ vā syān militayor vā? nādyaḥ pratyekam evā" śrayaikatvabhaṅgaprasaṅgāt.

Ibid., p. 1270.

been contended that the consequence of the incidence of opposition is not the bifurcation of a unit in which it occurs, but differentiation or distinction. Opposition makes an existent different from a non-existent and difference is always understood to be the characteristic of being and non-being in relation to one another. An existent is that which is possessed of being and a non-existent is that which is possessed of non-being and opposition being identical with being and non-being, the loci of being and non-being are cognised as numerically different, since numerical difference is the consequence of opposition. Opposition does not involve split of identity. It only makes being opposite not to itself, but to non-being. So also non-being is made opposite to being, because of its identity with opposition[1].

Let us take it for granted that opposition is the very nature of being and non-being, and also the contention that being and non-being and their loci are numerically different by virtue of this inherent opposition. There is no possibility therefore for being or non-being to be split up, because the opposition is always understood between being and non-being and their loci in relation to one another. It is asserted that the locus of being will be opposite to and numerically different from the locus of non-being. But a thing which is possessed of being and non-being successively maintains its numerical identity. Thus there may be a pen on the table at one time and on the removal of the pen, negation of the pen will be there. Thus the table is found to be possessed of being and non-being of the pen in succession, although there is no opposition or numerical difference which is alleged to be its consequence in the table *per se*. It may be contended that the opposition and numerical difference occur only at one time and not at different times. But time being admitted to be a single real, there can be no numerical difference of it taken by itself. So the qualifying phrase 'at one time' is a pointless re-iteration[2]. If however time be regarded to vary with the difference of conditions associated with it, then of course the qualification becomes intelligible.

1 KhKh, pp. 1270-71.

2 kālabheden' aikasya bhāvābhāvāśrayatvābhyupagamāt tadabhedā iti cet? na. tadabhedasya svābhāvikasya vivakṣitatve viśeṣaṇavaiyarthyāt.

Ibid., p. 1271.

But if a span of time qualified by one identical condition be regarded as a temporal unit, then the same difficulty will recur. For instance, a day may be regarded as one temporal unit being qualified by the association of the sun. In that case the table may be possessed of the pen and of its negation in the course of the day and the absence of numerical difference of the table in spite of its being the locus of the being and non-being of the pen at one time shows that there is no opposition between being and non-being. But it may be argued that though the day is one unit, it admits of variation, being associated with different conditions occurring within it. Thus the division of the day into hours, minutes and seconds is possible. So the phrase 'at the same time' stands for the unit of time which is not associated with diverse conditions. The period or the time called the day is however associated with different conditions, such as the movements of the hands of the watch. But this makes the determination of a unit of time impossible, because however small the unit may be taken, its simultaneous association with the movements of the different stars, the moon, and the sun cannot be eliminated. And if the association of different conditions be responsible for the difference of time-unit, then even a small moment will have to be regarded as diversified into various units, as its association with diverse conditions mentioned above cannot be debarred. It has however been contended that this contingency cannot arise, because the unit of time is determined by conditions which do not coincide. But coincidence is not intelligible without reference to a unit of time. And the unit of time again exposes itself to the question of natural and conditional difference. We have found that time *per se* is one and the difference of time is only determined by the difference of associated conditions. But as the conditions can overlap, the temporal determinations cannot be made exact and reliable distinctions. So the determination of opposition and numerical difference of being and non-being with reference to time is doomed to futility[1].

We have seen that the logician has not succeeded in explaining the nature of opposition by making it a characteristic of being and

1 KhKh, p. 1271.

non-being severally. Let us try the alternative which makes opposition the characteristic of both being and non-being collectively. But what can be the meaning of collectivity? We may understand by it the compresence of being and non-being at one place or at one time, or their occurrence in the same place and in the same manner of relation, or in some other way different from the mode of relation[1]. The first alternative is unentertainable, because being and non-being can never subsist in one place. The second too is equally absurd, because being cannot coincide with non-being in the form of prior and posterior negation. Thus, for example, the being of the jar did not coincide with its non-being previous to its production or will not coincide with its non-being entailed by the cessation of the jar. The third alternative is found to be equally futile. The coincidence of conjunction of a jar in a locus along with its absence may be cited as an instance of coincidence of being and non-being. But the logician does not regard this coincidence as a case of opposition and if we look closely into the situation, we shall have to admit that the coincidence of being and non-being is only apparent. Conjunction occurs in a part of the space different from the part in which its non-being occurs. So the identity of locus is found to be impossible. And as regards the manner of relation, being and non-being are found to radically differ. Being is related by inherence and non-being by the relation of substantive-adjectival type. So the compresence of being and non-being is not intelligible with reference to the identity of time, of place, or of co-relation, or of relation to the substratum. As regards those who do not believe in the partial incidence of conjunction—the question of the compresence of being and non-being cannot arise with them. It is held by them that conjunction is possible only with space. But space is a unitary whole without parts. And so if anything, say, a jar is conjoined with it, it cannot be regarded as out of conjunction with space in respect of another part, because space has no parts. The coincidence of being and non-being therefore in the same substratum is absolutely out of the question[2].

1 militattvaṃ cā'nayor ekadeśatvaṃ vā 'bhimatam, ekakālatvaṃ vā, ekaprakāreṇa vṛttir vā, vṛttiprakārānyaikopādhyavacchedo vā? KhKh, p. 1272.

2 *Ibid.*, pp. 1272-73.

Even if we imagine that being and non-being may coincide in some inscrutable way different from the modes considered above, yet the impossibility of the coincidence of the being of a jar with its non-being entailed by non-production or cessation, cannot make them the substrata of opposition as they are never found to subsist together. If being were to be supposed to coincide with non-being entailed by non-production or cessation, the result would be that a thing would not fail to come into being or cease to be and in that case a jar would exist even before its production and cessation. However one may try, one cannot bring being and non-being, either generically or specifically, together which may serve as the basis of opposition. The truth of the matter is that opposition is never an empirical fact. It cannot be perceived to belong to an objective situation, because being and non-being can never coincide in any sense. The occurrence of being and non-being in separate locus is a fact no doubt, but that does not involve opposition. And compresence of them is never found. What Śrīharṣa seeks to drive home is that the empiricist cannot give a concrete instance of opposition. It only makes itself felt when we ideally try to bring being and non-being together. Opposition is thus *a priori* and ideal and never actual.[1] The realist who is also an empiricist is therefore bound to contradict himself whenever he would allege contradiction in a supposition, because supposition according to him must correspond with an objective situation. Thus contradiction cannot be regarded as a species of *reductio ad absurdum* just like self-dependence etc. by the logician who pins his faith on realism.

(5) The vicious infinite

Existence is an ultimate category. Other things are made existent by virtue of their participation in it. But existence *per se* is existent in its own right. The postulation of another existence in existence will give rise to an infinite series of existences. There will be no end and no rest at any stage. But this logical entailment of 'lack of end or rest' by the postulation of 'another existence' is possible if there be a necessary and universal concomitance between them. But there

1 KhKh, pp. 1273-74.

is no instance in which such concomitance can be cognised. If it were cognised, the fact of the veridical coincidence of the two would make it veridical and so the question of entailment of a false issue which is the very soul of *reductio ad absurdum* would be absurd. If the concomitance were never cognised the entailment could not be pressed as necessary and true[1]. If it be argued that there is no proof of the coincidence, the safe procedure will be to show that we cannot accept it as true in the absence of proof. But the attempt to show hypothetical entailment will in that case be bereft of all justification.

(6) *Tu quoque* or recrimination

We have seen that *tu quoque* consists in the counter-allegation of the same or similar defect against the opponent by the proponent. This is regarded as a kind of reasoning and is employed to refute the opponent when other forms of refutation do not occur to the party. Śrīharṣa has elaborately refuted the concept of opposition and we have just given an exposition of it. The logician may however pose a question to him: "Well, you have shown by your refutation that the concept of opposition is not defensible. But do you think that such expressions as 'opposition', or 'contradiction' etc. have got a significant meaning or not? If they are significant, you cannot deny that they stand for a conceivable fact, which your refutation seeks to disprove. If they are nonsensical expressions, then why have you taken pains to refute them?" To put it the other way about. Is the concept of opposition refuted by you understood by you or not? If not understood, how can you condemn it by showing defects in the concept? And if you refute it after understanding its nature, we would ask you whether your understanding is right or wrong. If your understanding of the concept of opposition be correct, you cannot refute it without self-contradiction. If however it be contended that the understanding is erroneous, then also you cannot escape the charge of self-contradiction. Erroneous cognition is possible, if there is a veridical cognition behind its back. The shell is erroneously

1 anavasthā tu yathā sattāyām api sattāntaram ity anavadhau sattāpravāhe iṣyamāṇe...doṣagrastatvāt. KhKh, p. 1308.

perceived as silver only because silver was correctly perceived in the past. The sceptic cannot show a single instance in which the datum of error was not the datum of a veridical cognition in the past. So the sceptic's refutation of opposition as illogical and unreal is bound to presuppose the reality of it, whether he accepts opposition as based upon the data of right or wrong cognition.

The logician's refutation of the sceptic takes the form of a *tu quoque* argument, because he thereby only confronts the sceptic with the same charge of self-contradiction, which was alleged by the latter against him. But Śrīharṣa asks, "What is the purpose of the employment of *tu quoque*?" Does the logician mean to say that the difficulty alleged by the opponent is equally present in the latter's position? Or, secondly, does the assertor of the *tu quoque* mean that the solution of the difficulty by the opponent will be the solution of the alleged difficulty in the proponent's position[1]? The first alternative is not approved by the canons of legitimate debate. There are three types of debate sanctioned in logic. (1) Legitimate discourse aiming at the determination of truth. This type is confined to the discourse between a teacher and a pupil or between friends. (2) Disputation, the objective of which is the defeat of the opponent by refutation of his position and the establishment of one's own position. (3) Wrangling, the objective of which is the opponent's defeat alone without regard to the proof of one's position. Now in the second and the third type of argument the refutation of the allegation of the opponent is the expected course of action on the part of the proponent. The counter-allegation of the same or similar difficulty in the opponent's position is not quite relevant. The failure to refute the alleged defect is tantamount to the admission of its justice and legitimacy and that will at once secure his defeat and so the debate cannot proceed further[2].

1 pratibandiṃ gṛhṇataḥ kiṃ parapakṣe doṣāpādanamātraṃ vivakṣitam, uta yas tvayā tatra samādhir abhidheyaḥ sa mayā 'pi 'ty abhiprāyāt svapakṣe samādhiḥ?

KhKh, p. 983.

2 na tāvad ādyaḥ aprastutatvāt............ *Ibid.*

The second alternative is not also legitimate. The logician intends to wait for the refutation of the counter-allegation of the same difficulty from the opponent's side. But what is expected is that the logician should directly give the solution of the difficulty alleged by the opponent. The opponent, particularly in the third type of debate, is not interested in the establishment of any position. In such a case the refutation of the opponent's position will be secured by showing that the allegation of the defect by the opponent is false. But the failure to adduce a defensive argument on this line proves the untenability of his position. The logician may however contend that the employment of the *tu quoque* argument is tantamount to the refutation of the opponent's position. And the onus of proof of the legitimacy of the allegation made by the opponent lies on him and if he succeeds in offering a solution of the counter-charge which is necessary for the defence of his position, the same solution will be offered by the logician himself[1].

But Śrīharṣa asserts that this is a false expectation[2]. The refutation of the *tu quoque* need not be necessarily equivalent to the refutation of the original allegation. The allegation and counter-allegation need not be analogous and so the solution of one will not necessarily be the solution of the other. For instance, the followers of Prabhākara maintain that all cognitions must be veridical. If however any cognition be admitted to be false, that is to say, to be contrary to fact, that would open the flood-gate of scepticism. There will be no ground for believing any cognition to be true. The logician may retort that this possibility of unbelief is equally present in the position of the aforesaid philosophers also, because the admission of the possibility of error is inescapable. So here the charge of scepticism is balanced by the counter-allegation of the same charge and thus it is a case of *tu quoque*. In this case the defect alleged viz. the inevitability of scepticism is the same. But the solution offered by the followers of Prabhākara is entirely different from that of the

1 bhavāṃs tāvad abhidhattāṃ kas tatra samādhiḥ tato mayā 'py abhidheya iti cet? KhKh, p. 984.

2 mayā tadabhidhānasya sāmpratam aprastutatvāt...... *Ibid.*

logician. Prabhākara regards all cognitions to be true and the truth of the cognition is believed by him to be self-certified. But the logician does not believe in the self-validation of cognition. He holds that the truth of a cognition is determined by verification. So though the charge and counter-charge are similar, the solution is different.

The logician may think that there must be a solution of the charge and the solution must be the same, the charge and the counter-charge being identical or similar.[1] The justification of the *tu quoque* lies in this belief. But it has been shown that the solution of the same difficulty is not the same as propounded by the different schools of philosophers. The logician may urge that the difference of solution is due to the difference in the fundamental philosophical standpoint of the different schools. But where such difference cannot be shown the solution of the same charge is bound to be identical. So the employment of the *tu quoque* argument is justified, because it only serves to draw the attention of the opponent to the truth of the necessity of the solution, the realisation of which will prompt the opponent to offer a solution and this will clinch the difficulty.[2]

But this also is a vain expectation on the logician's part. He has admitted that the difference of philosophical standpoint is responsible for the different solution of the same problem. If he asks for the elucidation of the difference of philosophical position adopted by the opponent, the latter is not bound to oblige him, when he adopts the procedure sanctioned in the third type of debate, because the purpose of such a debate is fulfilled by the allegation of a fallacy in the proponent's position.[3] The onus of solution therefore lies on the proponent and not the opponent. The failure of refutation on the proponent's part of the difficulty alleged by the opponent should bring the debate to a termination by the adjudication of defeat of the proponent.

Apart from the difference of philosophical position the difference in the nature of the object of dispute and consequently of solution also

1 sāmyād evam iti cet? na. vaiṣamyasyā 'vaśy-ābhyupeyatvāt, KhKh, p. 985.

2 *Ibid.*

3 ko'sau tatra viśeṣa iti cet? na. mayā sāmpratam tadabhidhānasy āprastutattvam ity uktatvāt. *Ibid.*, pp. 985-86.

warrants different solution of the same problem.[1] We here propose to give one or two concrete instances in support of our position that the same problem admits of different solutions. The logician posits the necessity of the admission of objective existence of the objects of experience on the ground of their being cognised as existent. Our cognitions cannot be unfounded and baseless, as this will mean the obliteration of the difference between truth and falsehood. So the cognition of diverse things as existent presupposes that they must participate in a common characteristic. And this characteristic is 'existence'. The ground of postulating objective existence as the common character of diverse objects of experience is this synthetic reference to them as 'existent'. It is on this ground that substance, quality, and action in spite of their diversity *inter se* are believed to be possessed of and united by the common bond of 'existence'. Now let us take the case of existence itself, which is supposed to account for the identity of reference regarding the categories mentioned above. Is existence existent or not? The latter alternative must be dismissed as absurd, since the idea of existence being non-existent is unentertainable on account of contradiction. The first alternative is therefore to be accepted as true. But it is not immune from a logical difficulty. (1) 'Existence must be existent'. But what is the meaning of the proposition? Is it to be interpreted on the same line as the proposition (2) 'The pen is existent'. The latter proposition affirms 'existent' as the predicate. We have reiterated the necessity of numerical difference of the subject and the predicate in a proposition. It is a law which is unimpeachable. There is no difficulty regarding the second proposition, because of the numerical difference of the subject and the predicate. But in the case of the first proposition, "Existence is existent" (i.e. possessed of existence) it is open to the charge of tautology if the predicated existence be regarded as numerically identical with the subject. If to avoid tautology it is asserted that 'existence' that is predicated is numerically different from the subject 'existence', then it will involve a *regressus ad infinitum*. The second existence

1 dūṣyagataviśeṣabhāvābhāvaviśeṣitatvādinā 'pi tadvaiṣamyasambhavāt.
KhKh, p. 987.

being competent to be affirmed as existent will presuppose a third existence. The third also being in the same position will require a fourth existence and there will be no end of it. The logician escapes this dilemma by asserting existence to be an ultimate fact, which is existent in its own right and on its own account[1].

In spite of the identity of the philosophical standpoint it is apparent from the consideration of this problem that a self-identical problem admits of different solutions. The problem was how to account for the synthetic reference of diverse objects of experience as existent in spite of their diversity. In the case of substance, quality, and action the postulation of one identical attribute informing all these different categories has been offered as the solution. Regarding existence itself the postulation of another numerically different existence has been found to lead to an infinite regress and so existence has been believed to be self-sufficient. It is clear that there may be different solutions of a self-same problem. This is also found to be the case regarding inherence. The Vaiśeṣika philosopher believes that substance, quality, action, universal, particularity (*viśeṣa*) and inherence are positive categories. And among them the first five are capable of being related by way of inherence. As regards inherence, though it is a positive category, it is denied that it can be related by way of inherence to the terms. A quality is related to a substance by inherence and though inherence is neither quality nor substance and as such is a third entity, it does not stand in need of an additional inherence to make it related to the terms. The postulation of another inherence will make an infinite regress inevitable, because how many times inherence may be postulated each inherence being numerically different from the relata will require another inherence to make it related to the terms. In order to avoid this predicament the Vaiśeṣika asserts that inherence is self-related. In other words, it is both a term and a relation. Here also the problem is the same regarding the first five categories and the sixth one. But the solution is different.

It must be admitted by all lovers of justice, equity and fairplay in logical discussion that the logician's reliance on *tu quoque* as necessitating

1. KhKh, p. 987.

an identical solution is absolutely unjustified and unwarranted by facts. We now propose to drive home the untenability of *tu quoque* as a form of logical argument. What does the logician intend to prove by advancing a *tu quoque* against the Vedāntist without caring to refute the fallacies urged by the latter? He may intend either of these two things. In the first place, the fallacies urged by the Vedāntist may be regarded as inoffensive on the ground of their applicability to the position of the monist himself. In the second place, the logician may urge that though the fallacies may be actually present, they ought not to be urged on the ground that a defect which is common to both the parties and whose solution is bound to be the same should be ignored and slurred over in pursuance of the dictum of Kumārila "In a case which is exposed to the same defect, that is bound to be solved equally by both the parties, it is against the canons of logic that one of the parties should be embarrassed by the demand of its solution[1]".

The first alternative is not capable of being pressed with success. When the Vedāntist urges the fallacies of non-existent or inconclusive reason, it is open to the logician to refute the charge by showing that the fallacies do not actually exist. Does the definition of the fallacies concerned apply to the fallacies urged by the Vedāntist or not? If the definitions do not apply then the logician can dismiss it immediately on the ground that they are not fallacies, being devoid of their characteristics. But then the logician's resort to *to quoque* is absolutely unavailing and uncalled for. If, on the other hand, the fallacies are possessed of the characteristic features of fallacies propounded by the logician himself, then the original proposition of the logician will be vitiated by the fallacies in question. The logician may however contend that the fallacies urged by the Vedāntist are not fallacies proper, because they are admittedly present in the position of the Vedāntist himself, which is believed by him to be correct. Admitting the

1 kiñca parodbhāvitam asiddhyādikam aparihṛtya pratibandyā pratyavatiṣṭhamānasya ko'bhiprāyaḥ kiṃ yad idaṃ doṣatayā pareṇo 'dbhāvitaṃ tad adūṣaṇam......"yatrobhayor ityādi".

KhKh, pp. 987-88.

ingenuity of the defence the Vedāntist may retort: "Let it be so. But then the logician's definition of the fallacy will be wrong, because if it applies fully to a correct reason, it will be guilty of over-extension." The purport of the logician seems to be this. A fallacy which is the subject-matter of *tu quoque* should not be regarded as a fallacy, but as a legitimate reason. But the logician conveniently ignores that the definition of the fallacies applies to it, and apart from the *tu quoque* there is nothing to discriminate between the present instance and the other instances of the fallacies. And if the opponent employs a *tu quoque* against him in the form "If the fallacy urged by me be not a fallacy proper in spite of the presence of all the factors in it, then the other cases of fallacy also should cease to be fallacies" and how will the logician escape this *tu quoque*[1]?

It may however be contended that *tu quoque* is a case of opposition. One cannot deny the plausibility of the contention of the Vedāntist that the fallacies urged by him should be regarded as fallacies proper, when all the conditions of fallacy are present in them. But the logician's standpoint cannot be lightly brushed aside that a position which is admitted by both the parties in a debate cannot be regarded as fallacious. The result of these two rival claims, one pitted against the other, is a case of doubt, whether the fallacies under dispute are cases of fallacies proper[2]. The employment of *tu quoque* is then justified in creating a deadlock. But this defence admits that the reason employed by the proponent is incompetent to prove the position advocated by him. So the question is not of equal advantage as the opponent's contention that the thesis of the proponent is untenable stands unrefuted.

Let us now examine the second alternative that a fallacy which equally affects the position of the proponent and the opponent should not be exposed in a debate, because both the parties are under duress to offer a solution of it. But the Vedāntist is not prepared to submit to this convention, because it is bound to give rise to complications

1 KhKh, p. 988.

2 niyāmakābhāve...sandehaḥ paryavasita iti cet?, *Ibid.*

which will make all debate impossible. If the *tu quoque* be admitted to be a legitimate argument, no debate will be possible. Let us take up the argument of the Naiyāyika: "Syllables are non-eternal, because they are audible, like sound". Now it is admitted by both the Naiyāyika and the Mīmāṃsist that sound is non-eternal and is also audible. The Mīmāṃsist however thinks the argument to be vitiated by fallacies. Audibility according to him is an inconclusive reason, because even sound-universal (*dhvanitva*) is audible, though it is admitted to be eternal by both the parties. Furthermore, the Naiyāyika's theory of sound-production makes all the sounds except the final one not capable of being perceived. The Naiyāyika believes sound to be a quality of ether which is produced by articulation or impact of ether with an instrument. Now sound being a quality cannot move, because only a substance can move. So the initial sound produced by a speaker perishes in the very place in which it occurs and accordingly it cannot be perceived by a person standing at a distance. It is therefore held by the Nyāya-Vaiśeṣika philosopher that one sound produces another sound in the proximate point of space, and the series is completed only when the last sound is produced in the ether enclosed within the ear-cavity of the hearer. It is this sound which is perceived by the hearer. All other sounds beginning with the initial and ending in the penultimate sound, are bound to remain unheard. These sounds therefore are not audible and so audibility employed by the Naiyāyika as the ground of inferring the perishability of sound cannot belong to them, and as such cannot prove that they are perishable. Thus the reason, viz. audibility, is vitiated by a two-fold fallacy, namely, inconclusiveness and non-existence in the subject. Even if the charge of inconclusiveness be waived, the charge of non-existence in the subject, viz. all the sounds including the penultimate which are also believed by the Naiyāyika to be perishable, cannot be overcome[1].

The Naiyāyika in defence may employ a *tu quoque*. He may rejoin: "Your criticism proves your carping spirit. If this line of argument were correct and legitimate that would make all inference

1 KhKh, p. 990. See also Ānandapūrṇa's commentary on KhKh, p. 990.

invalid including even an inference which is admitted to be valid by both the parties to the dispute. The hill is possessed of fire, because it is possessed of smoke, is an instance of inference recognised as valid by both the Mīmāṃsist and the Naiyāyika. But a censorious debater may easily pick holes in it and show that the argument is vitiated by fallacies. For instance, it may be contended that smoke is not necessarily concomitant with fire, because smoke is spread over a large area of space which is devoid of fire. This shows that the association of smoke is not necessarily a case of association with fire. Moreover smoke is present in a part of the hill possessed of a carbohydrate and is non-existent in other parts. So the probans is vitiated by the fallacy of partial non-existence in the subject, in addition to the fallacy of non-concomitance urged before[1].

It is obvious from the above consideration that the fallacies which equally affect the position of the proponent and the opponent should not be urged, because that would make an inference of acknowledged legitimacy vicious and illegitimate. This is the contention of the Naiyāyika. But the Mīmāṃsist avers that the employment of *tu quoque* on the basis of a legitimate argument is fraught with fatal consequences. If a legitimate inference is made a bugbear by exploiting it as a *tu quoque* argument with a view to gagging the opponent into silence, the same procedure may be followed by the opponent for the vindication of an apparently illegitimate argument. For instance, it may be argued by the Mīmāṃsist, "Sound is eternal, because it is visible". Now visibility is non-existent in the subject and is also devoid of necessary concomitance with the probandum. But if the Naiyāyika urges this fallacy, the Mīmāṃsist may take shelter under *tu quoque* standing on the aforementioned argument of smoke and fire. He may contend that these two fallacies should not be urged, as they are also present in the smoke-fire argument acknowledged to be legitimate on all hands. And the plea of common difficulty put

1 tathā hy ubhayavādisammatadūṣyatvaṃ dhūmānumānādikaṃ yadi pratibandikaroti paras tadā...pratibandyā bhayād......

KhKh, p. 990.

forward by Kumārila can be advanced by the upholder of the fallacious argument[1].

The Naiyāyika may complain that he has been entirely misunderstood. He does not assert that the fallacy of non-existence or non-concomitance should be excluded in the examination of the opponent's argument. But what he intends to establish is this. Only those fallacies which are possessed of a trait susceptible to *tu quoque* should be excluded. Now the Vedāntist seeks to clarify the implication of the logician's contention by examining the nature of the trait. It will boil down on examination to the assertion that fallacies which are subject to *tu quoque* should be regarded as devoid of fallacious character. But even if we take it for granted that the fallacy is not a fallacy proper, the application of the terms of the definition would prove that the definition should be revised. If the definition be defended by a qualifying *proviso*, 'except those cases which are liable to *tu quoque* and hence proved to be legitimate,' then there will be no reason for the application of the *tu quoque*, because the definition of fallacies will not apply to visibility etc. which may pass for legitimate reason, because of this inapplicability of this definition[2].

The contention of the Vedāntist is that *tu quoque* is not a legitimate form of argument. The Naiyāyika has been constrained to admit that *tu quoque* serves to prove that the fallacies subject to *tu quoque* are not fallacies or should not be exposed. The Vedāntist turns the table upon him by showing that the *tu quoque* argument can be exploited for the vindication of an undisputed fallacy on the basis of an argument of commonly acknowledged legitimacy.

It has been contended by some logicians that the difficulties have all been alleged against the *tu quoque* argument based upon a common problem. It has been hotly debated whether the defect which is

1 ...eṣā mayā 'pi sugrahai va taṃ prati pratibandī atrā 'pi śakyata eva paṭhitum...ityādi.

KhKh, p. 990. See also Ānandapūrṇa's commentary on KhKh, p. 990.

2 atha'yaṃ viśeṣam ādāya pratibandī syāt tanmātrasyā'nudbhāvanam... kṛtaṃ pratibandyā.

KhKh, pp. 990-91.

equally present in the positions of the opponent and the proponent should be urged or not. And if it is to be urged. and to be remedied, on whom will the onus lie? It seems to be a question of priority of right and liability. Both the advocate of the legitimacy of the *tu quoque* and the disputant of it have striven utmost to claim the right of priority and to shift the onus of justification to the other side. Even if it be admitted that the result has been indecisive regarding bilateral *tu quoque* the logician may claim that it must be effective when it is unilateral. When a *tu quoque* confronts the opponent with contradiction of his own position alone and exclusively, the proponent is in a position of advantage, because the difficulty is to be met not by him but by the opponent alone. In such a situation the *tu quoque* is unilateral and is bound to act as an effective weapon of refutation. The logician seeks to justify his contention by means of a concrete illustration.

The Vedāntists deny the possibility of a true relation between consciousness and an external object. The logician affirms this relation to be of a subject-object type (*viṣaya-viṣayibhāva*). He contends that the denial of this relation will involve the Vedāntist in self-contradiction. The Vedāntist holds: "The objective world is unreal, because it is the object of cognition." Now it is admitted in this argument that there is a relation between the cognition and its object, and this relation is made the ground for denying the reality of the objective world. So the denial of the cognitive relation on the Vedāntist's part will preclude him from proving his favourite thesis, namely, the unreality of the world. Here the logician employs a *tu quoque* to show that the Vedāntist's denial will involve him in self-contradiction by making it impossible for him to prove the unreality of the world. This shows that the Vedāntist should not seek to repudiate the cognitive relation asserted by the logician. The Vedāntist however contends in reply that the failure to assert the impossibility of the cognitive relation will be tantamount to the proof of the logician's position. Thus the Vedāntist will employ *tu quoque* against the logician by showing that the logician's argument, seeking to prevent the Vedāntist from denial of the cognitive relation, is confronted by the argument showing the necessity of such denial, in order to maintain

his thesis, viz. the unreality of the objective world[1]. It is thus a case of double noose—the logician's argument showing the impossibility of the denial of cognitive relation by the Vedāntist and the latter's argument showing the logical necessity of the same. The Vedāntist is put in a dilemma. If he admits the reality of the cognitive relation, he will be constrained to admit the reality of the subject and the object. If on the other hand he denies the reality of the cognitive relation, he cannot make it the ground of denying the reality of the objective world[2]. In either case his denial of the reality of the objective world will become unjustifiable.

The Vedāntist does not admit that the dilemma affects him alone. The Vedāntist shows that the cognitive relation cannot be ultimately valid, because it is neither one of identity nor of otherness. If the object of cognition were different from the cognition in the same sense as an unknown object is, there would be no relation between the object and the cognition. If on the other hand the cognition and the object were identical the object would be one with the cognition and so the question of relation would not arise in the absence of the cognitum. But the felt relation between a cognition and its object is not capable of being repudiated as a psychological fact. What is denied is the ultimate logical validity of such a relation. And when the Vedāntist makes this empirical relation the ground of the unreality of the objective fact, he is not committed to the admission of its ultimate validity. The logician therefore cannot interpret the affirmation of this cognitive relation by the Vedāntist as the affirmation of an ultimate reality. Apart from the philosophical standpoint of the Vedāntist, he contends that he has shown a logical difficulty in the assumption of the reality of the cognitive relation advocated by the logician. The logician has made a counter-allegation that the denial of the reality of the cognitive relation by the Vedāntist will preclude him from using this cognitive relation as the ground of the denial of the objective reality. The Vedāntist in defence has advanced a

1 See Ānandapūrṇa's commentary on KhKh, p. 992.

2 ...ubhayataḥ-pāśā pratibandirajjur bhavata eva durnivārā syāt. KhKh, p. 992.

counter-plea that the failure of repudiation of the cognitive relation will amount to the admission of the opponent's position. Apart from the ultimate justification of the position which we have indicated above the Vedāntist has only confronted the logician's counter-allegation with another counter-allegation. So the *tu quoque* of the logician has been met by a *tu quoque*. From the logical standpoint it is a question of equalisation. What is intended by the Vedāntist is that *tu quoque* cannot be a legitimate argument, because it is always possible to meet one *tu quoque* by another *tu quoque* and there is nothing to choose between them. If you admit the validity of one, you must admit the validity of the other. But then the position becomes similar to what is called mutual opposition. When two parties seek to prove two opposite conclusions by equally plausible arguments, employing reasons of equal plausibility, the result is the failure of proof of either position. The position is also the same when one *tu quoque* is assailed by another *tu quoque*[1].

As regards the dictum of Kumārila that the *tu quoque* serves to act as a weapon of refutation by showing the inadmissibility of an argument exposed to the same charge, the Vedāntist categorically affirms that he does not admit the validity of it. It is at best an *argumentum ad verecundiam*. Mere appeal to authority is no argument. And if again authority is admitted to be a logical argument by the logician, it can be countered by the authority of Uddyotakara. Uddyotakara maintains that when the opponent seeks to avoid difficulty by means of a *tu quoque*, he admits that his position is exposed to the defect alleged and the counter-allegation of the same defect in the opposite position does not constitute its justification. On the contrary it amounts to the admission of the defect and this admission should be adjudged as the ground of his defeat[2].

1 mai'vam. mithoviruddhāyāḥ pratibandyās tarkābhāsatvāt...

KhKh, p. 992.

2 ...iti bruvann Uddyotakaro "yatrobhayor" ityādi vadato Bhaṭṭasya pratibhaṭīkartavyaḥ.

Ibid., p. 993.

CHAPTER XIV

REASONING *QUA* ORGAN OF INDUCTION

In the preceding chapter we have dealt with the criticism of reasoning as propounded by Śrīharṣa and the finding of Śrīharṣa has been that reasoning as an instrument of refutation is entirely undependable. Reasoning is based upon empirical evidence and is consequently subject to the limitations of human experience. The criticism of Śrīharṣa has made it abundantly clear that the concept of opposition is not capable of being derived from experience, because experience does not record a single case of compresence of opposites and the observation of their separate incidence cannot give a guarantee of the universality of their mutual exclusion. Empirical evidence is vitiated by contingency. It must therefore be admitted that the fundamental concept of opposition which we unhesitatingly believe to be true of experience universally and necessarily, is derived from the inherent constitution of our minds. In other words, it must be *a priori* and subjective and ideal. The compresence of opposites, of being and non-being of the same thing, is not endorsed by experience. Were it so there would be no opposition. Again the separate incidence of the opposites is not calculated to give rise to the idea of opposition, because there is no repugnance felt if the pen be present in one place and absent in the other. The opposition is felt when these two elements are ideally brought together. So opposition is always ideal and never actual and hence sense-experience can never be an organ of the discovery of opposition. No guarantee can be held out that this concept will hold good of the objective reality in a necessary and universal reference.

We have seen that the logicians of the Nyāya-Vaiśeṣika school have posited two types of reasoning, namely, (1) which serves to confirm the conclusion (*viṣayapariśodhaka*), and (2) as a condition of the knowledge of universal concomitance (*vyāptigrāhaka*) by means of the elimination of the opposite possibility. We now propose to deal with the criticism of the claims of reasoning as an organ of induction by which the Jaina logicians have set enormous store. In the light

of Śrīharṣa's critique we shall have to admit that this claim is not absolutely beyond dispute. The pivotal basis of inference is universal and necessary concomitance between what is called a probans and what is called a probandum. We have observed time and again that human experience is unequal to this task. A term can be a probans if it is indubitably known to be necessarily and universally concomitant with the probandum. This necessary and universal relation can be asserted only if it can be definitely known that the probans does not occur in a place which is definitely known to be bereft of the probandum. The possibility of doubt of the occurrence of the probans in a locus known to be bereft of the probandum will make this probans ineffectual as the proof of the probandum. It is required that the probans should be above suspicion like Caesar's wife, so far as its occurrence in a locus bereft of the probandum is concerned. Only that can be regarded as a probans which is definitely known to be impossible of occurrence in a place lacking in the probandum and if subsequent evidence attests its occurrence in a place which is bereft of the probandum or is calculated to create suspicion of the occurrence of the probans in such a place, the conclusion will not follow.

What is then the guarantor of the probans being necessarily concomitant with the probandum and of the impossibility of the occurrence of the probans in a place devoid of the probandum? As a matter of fact the multiplication of instances of the co-occurrence of the two terms cannot confer an immunity upon the probans from its possible deviation. In one word, the doubt of the contingency of the concomitance cannot be overruled, unless and until the occurrence of the probans without the probandum can be shown to be logically and ontologically impossible. The logicians have banked upon reasoning for the achievement of this certitude. But reasoning as we have seen is effective only when the concomitance of the ground and the consequent is securedly established. In other words, the necessary concomitance of two terms can be established only if we are sure of the necessary concomitance between their corresponding negatives. Thus smoke can be universally and necessarily known to be concomitant with fire only if it can be known that the negation of fire is necessarily concomitant with the negation of smoke—which

is the supposed deliverance of reasoning. The concomitance of the probans and the probandum is supposed to be guaranteed by reasoning. But as reasoning can be effective only if it is based in its turn upon the concomitance of the negatives, the question naturally arises, what is the guarantor of this second concomitance? If we make another reasoning the guarantor of it, the result will be a *regressus ad infinitum*. If reasoning be supposed to lack in necessary concomitance, it will be open to the charge of lack of logical sanction. The dilemma is inevitable whether reasoning is supposed to be based upon necessary concomitance or proclaimed to be independent of it[1].

The logician may retort that the criticism of Śrīharṣa is suicidal. Śrīharṣa's argument itself is a case of reasoning. The argument that the admission of necessary concomitance as the basis of reasoning will lead to infinite regress presupposes the necessary concomitance between such admission and infinite regress. So Śrīharṣa also will be faced with the dilemma. If he admits another reasoning as the guarantor of the necessary concomitance in question, he will have to face the music of infinite regress and if he denies necessary concomitance, the lack of logical sanction will stare him in the face. The criticism may be regarded as a case of *tu quoque*. But *tu quoque* or no *tu quoque* the critic cannot evade the responsibility of vindicating the justice of his argument when he elects to enter the arena of debate which is governed by strict rules of the logical game. If the critic refuses to play the role, his criticism will be dismissed as a case of blatant sophistry[2].

Śrīharṣa in defence does not rely upon *tu quoque* or its defects. He avers that he believes like the logician in the empirical validity of the logical instruments. But he asserts that these logical categories are nothing more than postulates, which, however useful they may be

1 ...tarkasya vyāptimūlatvābhyupagame 'navasthāprasaṅgāt. tadanabhyupagame mūlaśaithilyena tarkābhāsatvāpātāt.

KhKh, p. 677.

2 See Ānandapūrṇa's commentary on KhKh, p. 677: nanv ayam api kaścit tarko 'sya vyāptimūlatve tatkhaṇḍanavyāghātas tadamūlatve praśithilamūlatvam...

in the conduct of theoretical and practical transactions in life, cannot be believed to be possessed of ultimate and final validity, because of their self-contradictory nature. The Vedāntists accept the logical categories as postulates and believe in their empirical validity. What they are interested to prove is that these postulates have no metempirical and metaphysical validity[1]. Our whole life and its activities are subjected to move in the circle described by nescience and beyond this circle the concepts of logic or ethics have neither relevancy nor necessity. The Vedāntist insists that our empirical sciences such as logic, ethics, or whatever else it may be carry us to a great distance, but not long enough to enable us to cut this circle of original ignorance. All our enterprises and adventures are doomed to futility, if we depend entirely and unhesitatingly upon axioms and postulates of these sciences as the wherewithal to solve the ultimate mysteries. For the realisation of the ultimate truth we have to devise another organ, which is not irrational but suprarational, which is not opposed to human reason, though it transcends the latter.

The logician does not agree to make an unconditional surrender to the Vedāntist's terms. He admits that reasoning depends for its effectiveness upon the necessary concomitance between the ground and the consequent. But the admission of this basal concomitance does not necessitate infinite regress, because there can be no possibility of doubt regarding an ultimate fact, and the final concomitance from which reasoning derives its probative force is such an ultimate fact. Take for instance, the concept of causality. It is an ultimate fact which makes doubt about its validity self-contradictory. When a phenomenon is found to occur occasionally and contingently, the human mind instinctively asks for an antecedent condition as its explanation. And this antecedent condition is called the cause, provided it satisfies the other tests, namely, invariability (*niyama*), immediacy (*avyavahitatva*), and unconditionality (*anaupādhikatva* or *ananyathāsiddhatva*). By observation of concomitance in agreement and in difference, fire is ascertained to be the invariable, immediate and unconditional antecedent of smoke. Let us see whether a doubt

1 See also Ānandapūrṇa's commentary on KhKh, p. 677.

about smoke being the effect of fire is possible. The doubt of smoke being caused by an antecedent condition is not possible, because smoke, if uncaused would be either an eternal entity or a fictitious non-entity. But smoke is neither eternal, as it is seen to occur at a determinate place and time, nor a fiction, because in that case it would be non-existent even at the time when it was affirmed to be existent by the opponent himself[1].

The opponent may contend that the concomitance of smoke with fire is based upon the assumption of the impossibility of smoke in a fireless place—in other words, upon the concomitance of negation of fire with the negation of smoke. But this basic concomitance may be called in question, so far as its necessity is concerned. And if another reasoning is pressed into requisition for the rebuttal of the doubt, the result will be infinite regress, because the second reasoning also will necessarily be in the same predicament. The logician would assert that this doubt is impossible, because the necessity of the concomitance based upon causality is final and ultimate, and as such is not open to doubt. It is final and ultimate, because it does not stand in need of corroboration by another reasoning, and also because the doubt of it involves self-contradiction. The concomitance is regarded as ultimate also because it is unavoidable. The denial of the validity of such concomitance will make the knowledge of necessary concomitance impossible in every reference, and this will again make in its turn the knowledge of causality impossible, because causality is a case of necessary concomitance. The denial of causality or of its knowledge will make the opponent's participation in debate impossible. The assertion of an argument for or against a position is made with a view to the conviction of the opponent. This conviction is the effect, and the assertion is the cause of it. The repudiation of causality will make his own activity impossible. In other words, the opponent will be convicted of contradiction by his own action and by his own speech. This will also be tantamount to self-contradiction in another

1 ...tathā hy agnidhūmavyabhicāraśaṅkāyām bādhakas tarko yam abhidhīyate yadi dhūmo'gniṃ vyabhicared akāraṇakaḥ san nityaḥ syāt, na syād eva vā. sa cā'yam anuttaras tarkaḥ, tatra śaṅkāyāṃ vyāghātāpatteḥ.

KhKh, p. 578.

way, since to say that a thing is an effect and at the same time independent of a cause amounts to the assertion that it is not an effect at all. To say that an effect is not an effect, which is involved in the assertion of its independence of a cause, is equivalent to the repudiation of the nature of a thing[1]. It follows therefore that scepticism cannot be pushed too far and must recoil upon the opponent when it confronts him with self-contradiction.

It is possible to argue: "Let the inference based on causality be immune from doubt. Let it also be granted that causality is an ultimate relation, the denial of which makes self-contradiction unavoidable". It is possible to contend that after all the necessity of causality is only a subjective necessity. Our thinking principle is such that either by its natural constitution, or by acquired habit instilled by the social environment that the enquiry for the cause of an event is an irresistible impulse. Kant thinks this belief in causality to be inherent in the human understanding and he accordingly calls it a form of understanding, that is to say, the natural and inevitable way in which the human mind interprets successive events. Hume thinks that the belief in causality is rather customary. Whatever may be the genesis of the belief in causality, whether it is derived from the constitution of the human mind or fostered by custom, the necessity of the causal relation need not be more than subjective. There stand formidable difficulties in the way of belief in the ontological necessity of causation. Nāgārjuna has emphasised the difficulty in the understanding of the ontological relation between a so-called cause and a so-called effect. He asserts that the effect is not produced by itself. In other words, the cause and the effect cannot be identical as the Sāṃkhya maintains, since that would make causal activity superfluous. There is no meaning in supposing that the effect was existent before its production, because production means the bringing into existence of a fact which was non-existent before. To think that an existent is made existent is absurd. Thus the Sāṃkhya theory of pre-existence

1 tad eva hy āśaṅkyate yasmin nāśaṅkyamāne svakriyāvyāghātādayo doṣā nā 'vataranti'ti lokamaryādā. evaṃ sarvatrā 'nuttaras tarko bādhako 'bhidheya iti. KhKh, p. 678.

of effect cannot commend itself. The Naiyāyika's theory that the cause is entirely different from the effect and the relation between them is one of otherness is also unsatisfactory. We want to understand the intrinsic nature of causality, the belief in which seems to be universal. To say that oil is produced from sesame seeds, though oil was not pre-existent in them, and though there is no intrinsic relation between the cause and the effect, which would compel us to affiliate a particular kind of effect to a particular kind of cause, cannot amount to a philosophical explanation. It is only the assertion of an empirical fact that A follows B and we have not observed any deviation from this rule. The question why should fire produce light and not darkness, the opposite of it, though both are on a footing of equality, so far as the lack of intrinsic relation with fire is considered, the logician only with iteration added to vehemence if not arrogance asserts that it is light that follows fire and not darkness, and because the concomitance of fire as a class with smoke as a class has not been found to admit of deviation, the causal relation cannot be impeached. But even the most cussed sceptic does not doubt that there is regular sequence between the two kinds of events and this sequence has been uniformly observed. What he is sceptical about is the ontological necessity of relation between them which will make doubt about its variability impossible. The logician has failed to carry conviction to the critic or to set at rest his honest scruple.

Nāgārjuna contends that no intrinsic relation has been found between a cause and an effect. It is not identity nor pure otherness. Nor can it be supposed that the relation is synthesis of both, because apart from the logical incompatibility involved in this supposition, the synthesis will be open to attack on both fronts. But Nāgārjuna admits that the repudiation of causality by the Cārvāka Materialists who affirm that there is no need for postulating a causal relation, because it is the nature of events to come into existence at a determinate time and place without any compelling influence being brought to bear upon them, is tantamount to confession of failure[1]. However much

1 na svato nā 'pi parato na dvābhyām nā 'py ahetutaḥ// utpannā jātu vidyante bhāvāḥ kvacana kecana//

Mādhyamikakārikā, I. i.

the causal relation may be denounced it will never succeed in stifling our natural curiosity and demand for an explanation, "Why should an event occur at a determinate place and time, and not at another time and place, or always or never, if there be no determining reason for it?" So absolute indeterminism has not commended itself to the conscience of a thinking person as a satisfactory explanation. The belief in causality is inevitable in spite of the demonstration of the irrationality or rather lack of rational justification by the followers of Nāgārjuna and the Vedāntistic monists. Granted that the relation of causality cannot be explained in conformity with the accepted categories of logic, yet the philosophers have not been able to eradicate or dislodge this belief in the necessity of causal explanation. Call it an instinct or superstition engendered by *Māyā* it is there and no amount of cajolery or logical coercion will succeed in making us rid of it.

It may be urged that causality, and inference based upon it may not be capable of being denied, but all inference is not reducible to causality. What about other forms of inference? Take for instance, the inference of perishability on the ground of being a product. It is held that whatever is a product is liable to destruction. This relation between the fact of being a product and the fact of being perishable is not causality. It is believed that destruction though a product is not liable to further destruction. In other words, destruction though a product is not perishable. What is then the guarantee that a sound which is the product of an operation should not be imperishable like destruction? So the argument of causality, though it succeeds in protecting inferences based upon it, is not the solvent of the logical difficulty, so far as non-causal forms of inference are concerned. The logician answers this objection by asserting that causality is not the only ultimate fact which disarms doubt. That also is not liable to doubt which makes self-contradiction inevitable. It is this self-contradiction which is an ultimate fact and makes doubt impossible. The argument "Sound is perishable, because it is a product", is absolutely valid though it is not based upon causality. If a product were not perishable, it would be an eternal verity. To say that a thing is a product and is at the same time an eternal verity is to be guilty of

contradiction in terms. The very concept of product repels the idea of eternity. Furthermore the assertion of eternity of sound would make its eternal perception inevitable, which is however, opposed to the universal verdict of experience. So self-contradiction here is the *reductio ad absurdum* of the doubt of the opposite possibility and is the ultimate and final clincher. The analogy of destruction is not relevant. Destruction is not believed to be liable to destruction, because that would make the revival of the object destroyed irresistible. But no resuscitation of a thing once destroyed has been experienced. But so far as a positive entity is concerned it has not been found to be existent eternally if it has been found to be produced at a determinate place and time. The logician concludes that the validity of inference is determined by reasoning which dispels all doubt by tracing the validity to an ultimate fact, whose validity is self-evident and the denial of which involves self-contradiction.

The Vedāntist would assert that the logician has tried to prove the obvious and his is a case of wasted labour. The Vedāntist does not deny that the belief in causality is an ultimate conviction which no amount of logical argument can succeed in dislodging from the human mind. Ontologically the Vedāntist holds that the belief in causality is as much a superstition of ignorant minds, as the belief in the identity of the soul with the body. But his logical difficulty is not derived from his metaphysical theory. In the arena of logic he does not call in aid the metaphysical argument. He takes for granted that causality is an ultimate fact and is repugnant to doubt. Though the Vedāntist does not believe in the absolute validity of causality as a metaphysical fact, he accepts it as a valid empirical principle and logic also does not presuppose more than this empirical validity. The Vedāntist admits that smoke which is a product must have a cause. It is not held that smoke is possible independently of a cause. What the Vedāntist doubts is that there may be a plurality of causes for smoke. What is the guarantee that fire is the only possible cause of smoke? Smoke may be supposed to be the product of a cause which is other than fire and this does not involve contradiction

of the belief in the ultimate validity and necessity of the causal relation[1].

It may be argued in defence that this doubt of a plurality of causes does not occur normally to a person, who is acquainted with the use of fire. It may be so. But that does not make the doubt of a philosopher impossible. The possibility of doubt of fire being the sole cause of smoke makes the inference of fire from smoke precarious. This shows that the belief in the necessary concomitance of smoke with fire is only possessed of empirical validity and not the sort of validity which is presupposed even in logic. The belief in the abstract necessity of causality does not afford any advantage, so far as its application to concrete instances is taken into consideration. So long as the possibility of doubt of other causes is not eliminated, all our inferences based upon causality will fail to achieve certitude. What is true of inference is true of reasoning also, because both are dependent upon the validity of necessary concomitance. Even if the concomitance be reduced to causality which as an abstract principle must be believed to be universally valid, the validity of the belief in the necessary concomitance of smoke with fire cannot be securedly established. It is possible to argue that this doubt is not spontaneous and rather bespeaks a hypercritical attitude, as no instance of smoke being produced by anything other than fire has been observed by anybody. But non-observation is not the proof of its impossibility. There is no assurance that such a case will not be observed in future, or is not observed in an unknown region.

The logician has argued that if smoke be capable of being produced from fire and what is not-fire, then smoke will be heterogeneous owing to the heterogeneous character of the causes. A smoke which is the product of fire will be different in kind from the smoke which is produced from non-fire. This will mean that smoke is not homogeneous—an admission which is not warranted by experience[2].

1 ......kim ity evaṃ śaṅkitavyaṃ yad dhetuphalabhāva eva na bhaviṣyati. evan tu śaṃkitavyam, agniṃ vihāyā 'nyasmād api hetor ayam udeṣyatī'ti.

KhKh, p. 679.

2 na ca vācyam evaṃ hi sati dhūmasy 'aikajātitvaṃ na syād iti.

Ibid.

The Vedāntist is not convinced by this argument. There may be different species of smoke and in spite of the difference of one species from another there is no reason why should the different species not possess a common generic character, just like the different human races. The difference of the generic character of the causes of smoke can at most account for the difference of characteristics of species belonging to the same genus. Furthermore the very assumption that the difference in the generic character of the causes will entail the difference in the generic character of the effect is not guaranteed either by logic or by experience. It is not a fact that different causes do not produce a homogeneous effect. Cognition is produced by various causes. Thus the cognition of a jar is produced by sense-object contact. The cognition of the sense-organ is generated by a concomitant probans and that of religious merit and demerit is engendered by the language of scripture. But all these instances of cognition, though produced by different and heterogeneous causal conditions are homogeneous, because they all share in the common generic character of cognition which may be called the cognition-universal[1]. So there is nothing repugnant in the theory that various heterogeneous causes can produce independently of one another the same kind of smoke possessing the same generic character. The contention that homogeneity of effect can be accounted for only by the homogeneity of the cause must be regarded as an approximate estimation of the causal relation.

It has been contended by the logician that it is preposterous to suppose that various heterogeneous causes can produce a homogeneous effect. A jar is produced from clay and a linen textile is produced from cotton yarns. It is never found that they are produced promiscuously—a linen from clay and a jar from yarns. There is no deviation from the law that a homogeneous cause produces a homogeneous effect and a heterogeneous effect is produced by a heterogeneous cause. As regards the exception adduced by the Vedāntist in the case of cognition a little reflection will show that there is no breach of the law

1 kvacid indriyajanyatve kvacid anumānādijanyatve 'pi jñānaikajātyavat tadupapatteḥ.

KhKh, pp. 679-80.

even in this case. The cognition that is produced by sense-object contact is intuitional in character, the cognition produced by the concomitant probans is inferential, and the cognition produced by language is verbal in nature. So there is no absolute homogeneity in the cognition variously produced by various causes. Sense-object contact is responsible for the intuitionality, probans for the inferentiality, and language for the verbality of the resultant cognition[1]

The Vedāntist does not accept this explanation as satisfactory. If the different conditions of cognition are responsible only for the specific character of cognition, such as intuitionality etc., then the common condition of the generic character, viz. cognitionhood or cognition-universal, which appertains to all cognitions in spite of their variation as species, has to be formulated. It will be immediately shown that no such common condition is possible of assertion. And in the absence of a common condition the generic character of all cognitions, viz. their cognitionhood will remain unaccountable[2]. If again cognitionhood be undetermined in its incidence, there will be no logical bar to the promiscuous occurrence of cognitionhood even in inanimate objects, say a plate or a pen, and in such psychical entities as conation, aversion, and the like. So there must be a determining condition of the incidence of cognitionhood. And as a common condition is not apprehensible, it is logically inescapable that we should assert a sense-organ, or a probans, or a linguistic symbol, variously and independently of one another as the condition of it. The law that the nature of effects is determined by the nature of causes is more fundamental than the law of homogeneity. In conformity with this law we must admit that a plurality of heterogeneous causes can produce a homogeneous and unvarious effect, particularly when a homogeneous character in the causes is not comprehensible.

Let us waive for the present our objection regarding the lack of a common ground in the plurality of causes of cognition and agree

1 KhKh, p. 680. See also Ānandapūrṇa's commentary on KhKh, pp. 680-81.

2 jñānatvasy'ākasmikatvaparihārārthaṃ tatkāraṇasy' ānugatasya bhavatā 'vaśyaṃ vaktavyatvāt.

KhKh, p. 680.

for the sake of argument that the different conditions only contribute to the different characteristics in the effects as the Naiyāyika insists. Even then we can contend that smoke can be produced by fire as well as by some other cause. We may presume in imitation of the logician that fire is responsible for a particular difference in the nature of smoke. In other words, there is no *a priori* difficulty against the postulation of different species of smoke. Smoke produced by a fire may have a different specific character which will distinguish it from the smoke produced by some other cause. So the postulation of a plurality of causes for smoke cannot be dismissed as a logical absurdity. The result will be that the absence of fire will not be the ground for the inference of the absence of smoke as such, though it may legitimately serve as the ground for the inference of the absence of a particular species of smoke[1].

The logician may contend that the contention of the Vedāntist could be accepted if the difference of character in smoke were discernible like the difference of nature in the various kinds of cognition produced by various causes. In the absence of such variation how can it be contended that smoke may be produced by fire as well as what is not-fire? All our experiences of smoke attest the presence of a uniform generic character in each instance. It is unthinkable that a different species of smoke produced by a cause other than fire would have escaped the observation of mankind up till now, if any such species were possible[2].

The Vedāntist argues that the Naiyāyika misses the point of his contention and lays emphasis upon a fact which is not disputed. It is not asserted that a different species of smoke is observed. But the non-observation cannot *a priori* prove the impossibility of such a species. As regards the contention that up till now no heterogeneous trait in smoke has been observed, it is admitted as a fact, but this may be due to an accident that smoke which is produced by another cause

1 dhūme 'pi vahner viśeṣe eva prayojakatvasya tad-vac chaṅkituṃ śakyatvāt.

KhKh, p. 680. See also Ānandapūrṇa's commentary on KhKh, p. 680.

2 na dṛśyate tāvad agniprayojyo dhūme viśeṣa iti......

KhKh, p. 680.

has not been observed. The condition of perception of a heterogeneous trait in smoke is the perception of different species and because such a species has not yet been discovered all observed cases of smoke which are invariably produced by fire are presumed to be possessed of a homogeneous nature. One cannot deny the *a priori* possibility of other kinds of smoke produced by causes other than fire simply on the basis of our present knowledge. The savage people of an undiscovered island may deny the possibility of aeroplane on the basis of his knowledge. But this only proves his ignorance and not the objective impossibility of his object of ignorance. The same may be the case with regard to the different species of smoke, which though logically thinkable, may have escaped all observations. It is quite plausible that such species of smoke may be discovered in future and then we shall be aware of the difference of nature of the different species of smoke *inter se*[1].

The logicians have however attempted to account for the community of the nature of various cognitions by means of the co-operation of the mind with the soul which is alleged by them to be the universal condition of all cognitions. The Vedāntist's contention that even heterogeneous causes can produce a homogenous effect is based upon the supposed lack of a common condition in the case of different species of cognitions. He has banked upon the impossibility of the formulation of such a common cause in support of his position. But the contact of the mind with the soul is regarded by the logician as the universal condition of cognition and the different conditions superadded to this, only account for the specific difference, such as intuitionality and the like. The Vedāntist however has demurred to accept this as the common cause of cognitions. The mind-soul contact is also the condition of desire, volition, aversion, love, antipathy etc., which are non-cognitional in character. So this cannot be regarded as the common condition of cognitions. If however the logicians posit an unperceivable entity such as religious merit or demerit, or a causal energy inherent in the different conditions of cognition, or the

1 ......na vācyam. tadadarśanasy'āpātato...iti sambhāvanāyā durnivāratvāt. KhKh, p. 680.

presence of cognition-universal, or the pre-negation of cognition, as the common condition of the common cognitional character of the different species of cognition, the Vedāntist also may formulate some such unperceived fact as the common condition of smoke-character, pertaining to the different species of smoke. The differences of the specific nature of the different species of smoke may then be accounted for by the different conditions such as fire and not-fire superadded to this common condition[1].

The logician however does not regard the two cases as analogous. The postulation of unseen moral destiny, or some such unperceived fact, as the common condition of the different species of cognitions, is necessitated by the consideration that the accepted conditions of perception or inference are seen to vary in different cases, and because there is no observed common ground in the causal conditions concerned. But the case of smoke stands entirely in a different position. No instance of smoke has been observed to be independent of fire as its condition. And no instance of smoke again has been observed to manifest a heterogeneous characteristic like perceptual and inferential cognitions. So the postulation of an unseen moral destiny as the common causal condition of smoke is uncalled for. Besides, this runs counter to the accepted dictum of scientific and philosophical speculations that an unobserved condition should not be postulated when an observed condition can account for an observed fact[2]. The Vedāntist however is not satisfied by this explanation. He complains that the logician has sought to minimise the difficulty in his eagerness for an easy solution. It is never disputed that no case of smoke unproduced by fire has been observed. But the possibility of such a species of smoke is not ruled out by this empirical evidence and this makes the inference of fire from smoke or the inference of the absence of smoke from the absence of fire precarious[3].

1 asty ātmamanoyogo 'nugataṃ kāraṇaṃ jñānotpattāv iticet? na...... śakyata eva śaṅkitum.

KhKh, p. 682.

2 dṛṣṭe vyabhicāre yuktam adṛṣṭāder aikajātyaparikalpanam iti cet?

KhKh, p. 683.

3 *Ibid.*

The logician contends that the admission of the possibility of plurality of causes will make all inference impossible. Whenever an inference will be sought to be made from an effect the sceptic may oppose it by pointing to the possibility of an unknown cause. The result will be an unrelieved deadlock of all theoretical and practical activities. If the Vedāntist were sincere in his doubt, he would be precluded from participation in a debate. The Vedāntist argues for the conviction of the opponent believing him to be an embodied spirit. But the knowledge that the opponent is a spirit can be secured only by an inference. And this inference may be precluded by the suspicion that the opponent may not be possessed of spirit like the proponent, since there may be a cause other than the spirit to account for the opponent's vital activities on the basis of which the spirit is inferred. So the attempt to throw doubt on concomitance of an accepted cause and an accepted effect by the Vedāntist will entangle him in the meshes of self-contradiction.[1]

The Vedāntist asserts in reply that the logician only sees one side of the issue which seems favourable to him. Just like Nelson he conveniently puts the telescope on the blind eye to the other side of the problem, and pretends to think that the difficulty is solved. The Vedāntist contends that the supposed necessary concomitance, which is the basis of inference and reasoning alike, is susceptible to doubt. Now this doubt of the fallibility of concomitance is actual. And there are two courses open to the logician. He may either assert that doubtful concomitance is not a fault, or that a probans of doubtful concomitance though fallacious may yet be an organ of valid knowledge. The first alternative is out of the question, since the logician also regards it as a fallacy. The second alternative will make a false inference also pass as valid. For instance, when a person is aware of only two kinds of fire, one produced from faggots and another produced from hay, he may naturally infer on seeing fire that it is produced either from faggot or from hay. But this is certainly fallacious as there may be other causes of fire, say, friction of sticks, or

1 evaṃ śaṅkamānasya bhavato na kvacid anumānaṃ syāt...........sa eva vyāghāta iti cet?

KhKh, p. 683.

coal and so on. The argument is fallacious, because fire's concomitance with other causes is possible of doubt. The case is entirely analogous with smoke, because its concomitance with a cause other than fire is equally a matter of doubt[1].

The logician cannot aver that the conditions of doubt are not present in the case of smoke's concomitance with fire. It has been shown that our ignorance of other causes of smoke is not proof of the impossibility of the same, just as the ignorance of the person of other causes of fire except faggot and hay does not make his inference of either of these two alternative causes of fire immune from logical difficulty. Now the conditions of doubt are the cognition of common attributes, the non-cognition of special traits, and the cognizance of the two alternatives. Let us see whether these conditions are present in the case of smoke. Now smoke is a product and as such must have a cause. It is presumable that smoke may be the product of fire as well as what is not-fire. Now there is no known criterion by which the observed smoke may be affiliated to fire or to not-fire exclusively. From our present knowledge we are not in a position to discriminate between a smoke caused by fire from that produced by not-fire. The smoke-character or the attribute of being a product is common to both varieties. And this common character easily presents before us the two alternatives, fire and not-fire as the possible causes. And these are the conditions of doubt. But the logician who pleads for the unquestionable validity of the inference of fire from smoke expects us to believe that there may be a cause in all its fullness and yet the effect will not materialise. The employment of smoke as ground for the inference of fire is exposed to the same difficulty as the employment of fire in the aforementioned inference. If smoke be accorded a privileged position in spite of the presence of all the causal conditions of doubt of the fallibility of the concomitance, the natural deduction from this will be that there is no necessary connection between cause and effect. But the acquiescence in this position which has turned

1 dhūmavad vahner api vahnikāraṇaviśeṣānumānasy' aivaṃ sati sadanumānatvaprasaṅgāt.

KhKh, p. 683.

out to be unavoidable for the logician will involve him in self-contradiction[1]. His employment of an argument in order to prove or disprove a position is inspired by his belief in the infallibility of the causal relation between argumentation and production of conviction. The repudiation of the necessity of causal relation which is implied by his denial of doubt in the presence of the full conditions of it ill goes with his argumentation for the conviction of the opponent which proceeds from his belief in the causal relation.

The logician however pleads in self-defence that the Vedāntist's attempt at putting accredited causal inference on the same level with palpably false inference is bound to fail. He does not agree that the conditions of doubt are present in the case of inference of fire from smoke. The contradiction which such doubt involves serves as the clincher of it. The conditions of doubt include the non-cognition of special characteristics of a particular alternative, but the contradiction resulting from doubt acts *ipso facto* as the cognition of a special trait of fire. So the charge of the Vedāntist that all causal inferences are affected by the doubt of a plurality of causes falls to the ground, because the contradiction involved by such doubt shows that the doubt is not entertainable and as such the conditions of doubt are not present[2].

The Vedāntist does not accept this advocacy of validity of inference by appeal to contradiction as a satisfactory mode of argument. He argues that contradiction may be regarded as a clincher if the knowledge of it be secured by an accredited organ of knowledge. If the contradiction alleged be inspired by a fancy it will not act as a solvent of doubt. If on the other hand, contradiction be a real verity, then it must have a real condition. Now the condition of contradiction is alleged to be doubt. Doubt is thus the support and the abode of contradiction. If contradiction be proved by an accredited

1 sādhāraṇadharmadarśanaviśeṣādarśanādau saty api......svakriyāvyāghātas tulyaḥ.

KhKh, pp. 683-84.

2 vyāghātasy'aiva viśeṣatvāt taddarśanena śaṅkāsāmagry eva nā'sti matpakṣe kuto vyāghātasāmyam iti cet?

KhKh, p. 685.

organ of knowledge, the latter will automatically and *eo ipso* prove the reality of doubt. Contradiction is not a floating attribute with no local habitation. It is felt only when there is doubt. Unassociated with and irrespective of doubt contradiction is an impossibility. If contradiction be possible even without reference to doubt, then it will be inescapable both for a person who entertains a doubt and for a person who is not disturbed by such a visitation. Contradiction arises from doubt and is thus an invariable concomitant of it. The proof of one will be the proof of other. The logician may plead that contradiction is opposed to doubt and though it may not destroy the first doubt which is its condition, it will preclude emergence of further doubt. But this does not afford any advantage, since the initial doubt will make the necessary concomitance unreliable, and when this doubt ceases, contradiction also will automatically cease. In the absence of contradiction what will prevent the emergence of further doubt[1]?

We have shown in our examination of contradiction in the preceding chapter that contradiction is an ideal fact and is purely subjective. But the logician of the Nyāya-Vaiśeṣika school is an empiricist and a realist. He is constrained by his metaphysical commitments to postulate an objective ground for every cognition. We have shown following Śrīharṣa that the admission of an objective basis for contradiction entangles the realist in a morass of self-contradiction. All the objections of Śrīharṣa are directed against this realistic attitude. An ordinary person may think that these arguments are pure sophistry, because they only aim at demolishing our conception of contradiction which is ineradicable. There is substance in the logician's contention that the argument against contradiction can only succeed in its objective by showing contradiction in the concept. And Śrīharṣa has actually done this. So the argument is suicidal. But it misses the fundamental point of Śrīharṣa's criticism. His criticism does

1 ......vyāghātarūpasya viśeṣasya darśanaṃ śaṅkāpratipakṣabhūtam ucyate tat kiṃ pramāṇāt kutaś cid upajāyamānaṃ vaktavyam...kaḥ śaṅkāntarotpatter vārayite'ti vaktavyam.

KhKh, pp. 685-86.

not seek to prove that contradiction is an impossible or absurd conception. In fact the absurdity of an argument can be proved only by contradiction. What he seeks to establish is that the concept of contradiction is an *a priori* one, and the attempt to derive it from empirical evidence is bound to fail. Viewed in this light the criticism of Śrīharṣa should not give a shock to our logical sense, however paradoxical it may look at first sight.

We have seen that the logician insists that contradiction is the final solvent of doubt, which (contradiction) according to him serves as crucial evidence of the untruth of the opposite position and by necessary implication of the truth of the remaining alternative. The Vedāntist has argued that doubt is the condition and support of contradiction and as such is bound up with the latter and so there can be no antagonism between the two. The relation between doubt and contradiction is one of cause and effect and the effect cannot be destructive of the cause at least at the time of its genesis. But the logician points out that a subsequent psychical event is opposed to a preceding psychical event, though the latter is the cause of the former. So also with regard to sound. The subsequent sound is opposed to the preceding sound, though the latter is the cause of the former. It may therefore be argued that opposition is not incompatible with causal relation. The logician would agree that there is no opposition at the time of the genesis of the effect. But the effect may destroy the cause after having come into existence. Besides, though contradiction may not be opposed to doubt as its cause, the knowledge of contradiction or the memory-impression left by it may be destructive of doubt, because doubt and the knowledge or memory-impression of contradiction are not causally related. Knowledge of contradiction or the memory-impression of it is the effect of contradiction which is the effect of doubt. But the effect of an effect is not the effect of the original cause just as the cause of a cause is not the cause of the latter's effect. The logician further insists that contradiction as an existent is not opposed to doubt. The opposition is not between two existents *per se*, but between the *cognition* of contradiction, as opposed to the mere presence of it, and doubt. As has been observed before contradiction serves as crucial evidence (*viśeṣa*). Crucial evidence,

which is rather the peculiar characteristic of one of the alternatives, also does not *io ipso* eliminate doubt, but only when it is cognised as such. Similarly the cognition or memory-impression of the cognition of contradiction can destroy the doubt in spite of the fact that it is the cause of contradiction. There is a vital difference between contradiction and the cognition or the memory-impression of it and when the relation of opposition holds between these two facts, causally unrelated, the Vedāntist's criticism of it on the basis of causal relationship does not affect the logician's position in the least[1].

The Vedāntist would assert that the logician has entirely misunderstood the spirit of his contention. In the first place, the relation of opposition is not reducible to causal relation in its entirety. There is causal relation no doubt between doubt and contradiction, because contradiction emerges immediately upon the emergence of doubt. But doubt is integrally related to contradiction in that doubt is a content of the latter. Contradiction is felt only when doubt is felt along with it. Whether doubt be regarded as a qualifying adjective or the content or the support of contradiction, it is undeniable that doubt is a necessary concomitant of contradiction and is synchronous with it. So the analogy of causal opposition which obtains between two successive psychical events or successive sounds is not relevant to the problem under discussion. Contradiction is possible only if doubt is an integral part of it. So doubt is bound to co-exist with contradiction and the cessation of doubt will necessarily be concomitant with the cessation of contradiction. Thus it cannot be maintained that there is opposition between doubt and contradiction in the sense of non-compresence. As regards the contention of the logician that the cognition or memory-impression of contradiction will play the role of crucial evidence and will be destructive of doubt, it will be found on scrutiny to be as unsubstantial as the previous pleas. In the first place, the cognition of contradiction cannot be regarded as the eliminater of doubt, because doubt is a part and parcel of contradiction and as such will be an indispensable element of the content of such cognition. As for memory-impression it is only a replica of the

1 KhKh, p. 688.

original cognition and as such is subject to the same limitation. Moreover it is not warranted by experience that memory-impression of a special trait of one of the alternative terms of doubt serves to eliminate doubt. Contradiction has been put forward as a special trait and a crucial evidence, and its cognition or memory-impression has been supposed to exercise destructive influence upon doubt. But this supposition is unwarranted. If memory-impression of an opposite trait were to act as a deterrent or as a destructive agent of the doubt of the contrary, the potter would not doubt that the black unbaked jar would become red after its calcination in a potter's furnace. Black is opposed to white. The knowledge or memory-impression of the black colour of the unbaked jar should make such doubt impossible. So mere memory-impression of one particular trait cannot be supposed to stand in opposition to the doubt of the emergence of opposite, when the previously perceived trait has actually ceased to exist therein. The previous cognition of the memory-impression of contradiction cannot analogously be supposed to be deterrent or destructive of doubt if contradiction has ceased to exist. But contradiction is not opposed to doubt even when it is present and so is not on the same footing of advantage as the black colour which actually deters the emergence of an opposite colour during its presence[1]. And it has been shown that contradiction is not only not opposed to doubt but possesses it as a component part of its being.

It has been shown that contradiction is incapable of eliminating doubt, as doubt is its very condition and support, whether it be regarded as a part of its content, or its determining condition. If contradiction be supposed to have reference to fallibility of concomitance between a probans and a probandum as its condition and as a part of its content, the new content will have the same incidents as doubt has been shown to have. Contradiction will be dependent upon this new substitute and so cannot be expected to act as a hostile agent against the doubt of necessary concomitance[2].

It has been shown that contradiction or the knowledge of it cannot

1 KhKh, pp. 688-89.
2 *Ibid.*, p. 689.

be established by an accredited organ of knowledge. If contradiction were to be established by a cognitive organ as a veridical fact, the reality of doubt, which contradiction is supposed to eliminate, would also be established by it as an unquestionable factual verity. It may be supposed that the knowledge of contradiction is secured, not by a cognitive organ, but by a *reductio ad absurdum* in the form "If smoke were doubted to be non-concomitant with fire, the result would be contradiction". But the question will pertinently arise whether or not the *reductio ad absurdum* is based upon necessary concomitance between the ground, doubt of necessary concomitance and the consequent contradiction. If the necessary concomitance in question were lacking, the *reductio ad absurdum* would be a fallacy. And even if such a fallacious reasoning be supposed to prove its objective (*sic.* contradiction), it will itself be a case of self-contradiction, because to say that a fallacy is proof is to assert the co-existence of two incompatible facts[1]. If however the logician declares that a reasoning which is requisitioned to prove necessary concomitance does not stand in need of a further necessary concomitance as its basis, the result will be that any possible reasoning can be adduced against it, as the question of necessary concomitance is made irrelevant. There will then be no criterion for distinguishing a genuine reasoning from a spurious one, since the only criterion of genuine reasoning, namely necessary concomitance, is affirmed to be irrelevant. Certainly the logician should be the last person to subscribe to this position.

If the logician admits that a reasoning is not possible without a necessary concomitance as its basis, the result will be a vicious infinite series, since the basal concomitance will be open to doubt like the previous one. According to the logician's standpoint reasoning is the only proof of necessary concomitance by means of elimination of doubt. So the doubt of the basal concomitance can be eliminated by another reasoning, for the establishment of whose concomitance another reasoning will be in request and the process will have no termination[2].

1 nā'pi yady atra vyabhicāraḥ śaṅkyeta tadā vyāghātaḥ syād ity evaṃrūpāt tarkād vyāghātāvagamaḥ......vyāghāta upanetum. KhKh, p. 692.

2 atha tarkasya vyāptir mūlabhūtā 'bhyupagamyate tatrā'pi vyabhicāra-śaṅkāyāṃ punar anavasthaiva........anavasthaiva. *Ibid.*, p. 693.

Udayana asserts that the denial of necessary concomitance will amount to denial of inference. But why should the sceptic think that the knowledge of necessary and universal concomitance be impossible? If it is argued that there is room for doubt whether the observed concomitance will hold in unobserved places and times and this makes inference precarious and undependable, Udayana retorts, how can doubt itself of the concomitance breaking down in unobserved places be possible? It presupposes that there are other places and times than the observed ones and this knowledge of other places and times must be secured by inference as perception is always concerned with the datum that is here and now. So doubt itself proves the necessity of inference. And if there be no doubt, then the concomitance will remain unchallenged and inference based upon it will take place without a hitch[1].

But an honest enquirer may submit: "We admit the ingenuity of the defence. Even if we take it at its face value, it will only prove that inference in the abstract is not capable of being repudiated without self-contradiction. We are however concerned with concrete cases. It cannot be denied that there is no self-contradiction in the denial or doubt of the necessary concomitance between smoke and fire, unless the logician can vouchsafe us the knowledge of the secret that makes the logician immune from the visitation of doubt. We do not see how we can be sure of the infallibility of a particular case of necessary concomitance and consequently of inference. What is the guarantor of the necessity and infallibility of concomitance? Our question is inspired by genuine and honest doubt, and we appeal to the logician to give a straight and an honest answer".

The logician affirms in reply that doubt is eliminated by a *reductio ad absurdum*. The *reductio ad absurdum* shows that such doubt leads to self-contradiction and the demonstration of this absurdity makes the doubter desist from enquiry into the fallibility of concomitance.

1 śaṅkā ced anumā 'styeva na cec chaṅkā tatastarām/
vyāghātāvadhir āśaṅkā tarkaḥ śaṅkāvadhir mataḥ//

NKu, ch. III. 7.

With the cessation of enquiry about the opposite possibility, the enquirer deduces the necessary conclusion from the probans. *Reductio ad absurdum* served to cut off the diversion of enquiry which was created by doubt. With the removal of this obstacle there is nothing which stands in the way of inference. But is not *reductio ad absurdum* itself based upon necessary concomitance and is not this basal concomitance open to doubt? The answer is a yes and a no. The necessary concomitance is no doubt the basis of the *reductio ad absurdum*, but the doubt of its infallibility cannot be pursued indefinitely. It is possible up till self-contradiction is not confronted. The final solvent of doubt is self-contradiction, which is the limit of it.

The Vedāntist would reply: "We have already evaluated this defence and shown that it is only a superficial solution of the problem. It has been shown that the suspicion of a plurality of causes makes all causal inferences precarious. Furthermore, even the abstract statement that doubt of the fallibility of concomitance is removed by contradiction has been shown to be a hasty assessment, because contradiction has been shown to be unopposed to doubt. Besides, contradiction itself is a case of reasoning and as such is dependent upon necessary concomitance of the ground and consequent. Self-contradiction in respect of personal behaviour is not the ultimate solvent of doubt, as we have shown in our critique of Gaṅgeśa's position in chapter iii that behaviour is not conditioned by philosophical conviction. The concept of contradiction has been analysed by Śrīharṣa and has been shown to be an unobjective idea. Again, it has been shown that contradiction presupposes doubt as its condition and continues so long as doubt exists. Doubt therefore constitutes the very life principle of contradiction". Śrīharṣa facetiously observes: "We can refute Udayana using his own words *mutatis mutandis*. If you admit the reality of contradiction you must admit the reality of doubt. If there be no doubt there will be no contradiction *a fortiori* because doubt is the condition and content of contradiction. How can then contradiction be the terminus of doubt? And as for reasoning, how can it eliminate doubt? Reasoning culminates in contradiction and the latter has been shown to be bound up by an

indissoluble tie of natural alliance with doubt—it being the very life and soul of contradiction"[1].

But a difficulty may be urged: "Well, even if we admit for the sake of argument that your analysis of contradiction is correct and that we have failed to refute your argument yet it cannot be gainsaid that nobody will be convinced by it. We cease to doubt as soon as we confront a contradiction. This ought to satisfy the critic if he is an honest enquirer of truth, that there is some sophistry in the argument, which has escaped detection."

The Vedāntist will not deny the plausibility of the logician's contention. He will agree with the logician that such is no doubt the case. A feeling of contradiction appears to set at rest all our difficulties. But this is nothing but an appearance, though attested by human psychology. But our estimation of truth and reality cannot be entirely based upon psychological evidence. Psychological argument is at best an argument *ad hominem*. We found in chapter iii that there were logicians who held that there were beliefs and convictions which were ingrained in our mental constitution and consequently universally accepted as truths. But even Gaṅgeśa had to admit that the wide-spread acceptance of these beliefs was not proof of their infallibility. We had to remark that the question of majority of the adherents of a belief was logically irrelevant and wide of the mark. The number of wise men, who would not accept anything on trust or on any other evidence than logical authentication, has been very small in all ages and climes. But this microscopic minority has been the salt of the earth. It is they who have been the friends, philosophers and guides of the academic bodies in this imperfect earth. To revert to our problem, the attempt at resolution of the philosopher's doubt by appeal to innate convictions or to the psychological evidence has been futile with regard to the Vedāntists, who have seen the limitations of human reason. But this scepticism of human

1 tasmād asmābhir apy asmin narthe na khalu duṣpaṭhā /
tvadgāthai'vā'nyathākāram akṣarāṇi kiyanty api//
vyāghāto yadi śaṅkā'sti na cec chaṅkā tatastarām/
vyāghātāvadhir āśaṅkā tarkaḥ śaṅkāvadhiḥ kutaḥ//

KhKh, p. 693.

reason does not argue an anti-intellectual or anti-rational attitude of mind. The Vedāntists were not misologues—they rather doted upon reason but refused to make an idol of it. They insisted that logical training was essential for the progress of humanity and was the necessary propaedeutic to the realisation of truth. But though it goes long long enough, it can make only an approximation to the truth. Some other resource is necessary for the realisation of the ultimate truth and this resource is supra-rational in character. It is not anti-rational, but is the efflorescence and fruition of rationality. The truth is our ownself and self-realisation alone can cut off all our doubts and problems and bursts all our ties and limitations. The devices of logical thought are extremely useful in that they carry a sincere searcher of truth progressively towards the realisation of truth. They will lead us to the verge of the gulf that separates truth from untruth. And this gulf can be crossed by self-realisation alone. But that does not mean that we can dispense with logic. Logic is the only resource on this side of perfection. The supreme service of logic consists in training our minds to detect the flaw in our progressive findings and to create divine unrest with everything that smacks of imperfection. But we must be aware of the pitfalls and dangers lurking unsuspected which even highly trained minds are apt to ignore, being lulled into a sense of security by the apparent triumphs of logic. The philosopher must not be afraid of doubt, but on the contrary, should welcome it as the rude friend who is not afraid of causing pain to us by breaking our self-complacence. The greatest enemy in the path of the aspirant for truth is self-satisfaction in the midway. This self-satisfaction is secured by our natural indolence or inertia to track the enemy to his den. This enemy is the half-truth which masquerades as full-truth.

The Vedāntist's love of logic is inspired by his love of truth and if he criticises the logician's achievements, he does it with a view to goad him to accelerate his step in the search of truth. He admits that the logician's achievements are praiseworthy, but he does not take them as the achievement of final triumph, which a flatterer and a false friend would do. The ultimate achievement which can be scored by logic is to demonstrate the futility of the weapons, which it has created for the organisation of human thought, after it has been

achieved. But thought however organised cannot give us direct glimpse of the face of truth. It must needs be supplanted by direct and immediate vision of truth for which logic is the necessary and indispensable propaedeutic.

We thought that our treatment of this supreme logical problem, which has led us to discuss the fundamental problems of logic, would remain incomplete and imperfect, unless we embodied the results of our study of the Vedāntist's speculations on this subject. This study may appear to stultify the previous results of our enquiries. If this be the impression left on the reader's mind, we shall be cordially and sincerely sorry for it. We have made a sincere attempt to give a faithful and at the same time a critical exposition of the thoughts of the different schools of philosophers on the fundamental logical problems in order to acquaint a modern student of philosophy with the logical speculations of ancient Indian thinkers. We have studiously avoided partisanship and deliberately refused to play the rôle of a yesman. We have reached the end of our quest. We have shown how the problem has provoked the ardour and enthusiasm of the logicians of India and the energetic discussion of the various issues bound up with the problem and the threadbare analysis of its implications and bearings as recorded by us in this book ought to convince a modern student of logic that the logical speculations of Indian thinkers were as astute as they were deep.

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